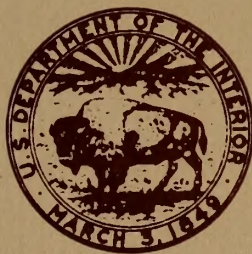




DRAFT RESOURCE MANAGEMENT PLAN and ENVIRONMENTAL IMPACT STATEMENT

**for the
White Mountains National Recreation Area**



BUREAU OF LAND MANAGEMENT
FAIRBANKS DISTRICT OFFICE
DECEMBER 30, 1983

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BUREAU OF LAND MANAGEMENT
Fairbanks District Office
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Fairbanks, Alaska 99707

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Dear Reader:

The Draft Resource Management Plan (RMP) and Environmental Impact Statement (EIS) for the White Mountains National Recreation Area is available for public review. Comments received on this draft will be used to help formulate the Final RMP/EIS, which will provide management guidelines for over one million acres of public lands. Written comments should be addressed to Mike Green, Yukon Area Manager, Attention: Jeff Scott, Planning Team Leader, Bureau of Land Management, PO Box 1150, Fairbanks, Alaska 99707. Comments must be received by March 30, 1984. Requests for information can be made by writing to the same address or by calling (907) 356-5367.

Public meetings and workshops to discuss the plan will be held in Fairbanks and Circle Hot Springs. The purpose of the workshops is to give the public an opportunity to ask questions or informally discuss the plan with some of the BLM personnel who helped prepare it. Formal comments will be recorded at the meetings.

Fairbanks February 27, 1984

Fairbanks North Star Borough Public Library
Workshop 1-4 pm
Meeting 7-8:45 pm

Circle Hot Springs February 29, 1984

Arctic Circle Hot Springs Lodge
Workshop 4-5 pm
Meeting 7-9 pm

All comments, written or oral, will be considered in the planning process.

Sincerely yours,

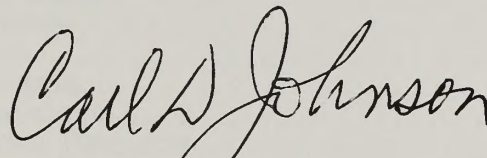
Carl D. Johnson
Carl D. Johnson
District Manager

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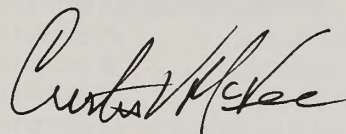
Draft Resource Management Plan and Environmental
Impact Statement for the White Mountains National
Recreation Area, Alaska

Prepared by

Bureau of Land Management
U.S. Department of the Interior



Carl D. Johnson
District Manager



Curtis V. McVee
Alaska State Director

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SUMMARY

The Resource Management Plan (RMP) will provide the basis for managing public lands within the White Mountains National Recreation Area (WMNRA). The WMNRA contains about one million acres of land, nearly all of which is in Federal ownership. The WMNRA was created by Public Law 96-487 in 1980. The law requires that a land use plan be developed for the WMNRA within five years of the enactment of the law. The Resource Management Plan will fulfill that requirement.

Through public participation and staff analysis, six planning issues were identified: recreation needs, mineral development, coordination of the RMP with the Beaver Creek National Wild River Management Plan, access, wildlife habitat, and subsistence use.

Following the collection of resource data and an analysis of public demands and resource capabilities, five alternative resource management plans were developed and analyzed. As required by Public Law 96-487, all alternatives would provide for (1) public outdoor recreation benefits; (2) conservation of scenic, scientific, historic, fish and wildlife, and other values contributing to public enjoyment; and (3) such management, utilization, and disposal of natural resources and the continuation of such existing uses and developments as will promote, or are compatible with, or do not significantly impair public recreation and conservation of the scenic, scientific, historic, fish and wildlife, or other values contributing to public enjoyment.

Alternative A would provide a continuation of present management. It is the "no action" alternative. Recreation management would be aimed at maintaining present recreation opportunities, which are largely primitive. Few facilities or services would be provided. Mineral development would be allowed only on valid existing claims. Management of wildlife and other resources would remain at a relatively low level.

Alternative B would increase the level of resource protection. Recreation management would still be aimed at maintaining mostly primitive values, but there would be a higher level of visitor services and some use restrictions. All existing mining claims could be maintained or converted to leases, but there would be stricter regulation of mining operations. Wildlife habitat would be improved and measures would be taken to provide special protection for certain other resources. Access would remain limited.

Alternative C would provide a somewhat wider range of use opportunities. About 44% of the area would be managed for primitive values, with very restricted development. The rest of the area would be open to more recreational development as well as to some mineral development. Access would be improved in this area. Wildlife and other resources would be protected through regulation from possible adverse effects of development.

Alternative D would provide the greatest opportunities for human use of the WMNRA. About 16% of the area would be managed for primitive values. The remainder would be open to some recreational and mineral development, with special measures to protect wildlife and other resources. Access would be improved.

Alternative E, the Preferred Alternative, is based on information gathered from the public review and staff analysis of the other four alternatives. About 29%

of the area would be managed for primitive values, with very restricted development. The primitive area would encompass the areas of highest scenic quality as well as Beaver Creek National Wild River. The remainder of the area would be open to more recreational development as well as some mineral development. Access would be improved, and wildlife and other values would be protected through management and regulation. This alternative would allow such utilization of valuable resources as will promote or not significantly impair public recreation.

Based on the response to this Draft Resource Management Plan/Environmental Impact Statement, a Final RMP/EIS will be prepared and will be published in August, 1984.

INTRODUCTION

Purpose and Need

The White Mountains National Recreation Area (WMNRA) was created by the Alaska National Interest Lands Conservation Act (Public Law 96-487) in 1980. The WMNRA was established to provide for public outdoor recreation use, for the conservation of values which contribute to public enjoyment, and for such utilization or disposal of natural resources as will promote, be compatible with, or not significantly impair public recreation.

PL 96-487 requires a land use plan to be written for the area. The law also requires that in planning for the recreational use and management of the WMNRA, the Federal government work closely with the State of Alaska.

The purpose of this plan is to fulfill the requirements of PL 96-487. The plan will provide a framework for future management of all Federal lands within the WMNRA.

Location

The White Mountains National Recreation Area occupies about one million acres of land north of Fairbanks, Alaska. Location and boundaries can be seen on Map A. The WMNRA covers all of the White Mountains as well as a good deal of surrounding territory.

Beaver Creek was designated a National Wild River by PL 96-487. Though it is included within the area covered by this land use plan, a separate and more detailed management plan is being written for Beaver Creek National Wild River. The river plan will establish boundaries for the wild river corridor and provide guidance for land management within that corridor. The river plan is expected to be in effect by March 1984. The river corridor boundaries depicted in this document are the boundaries which are proposed at this time.

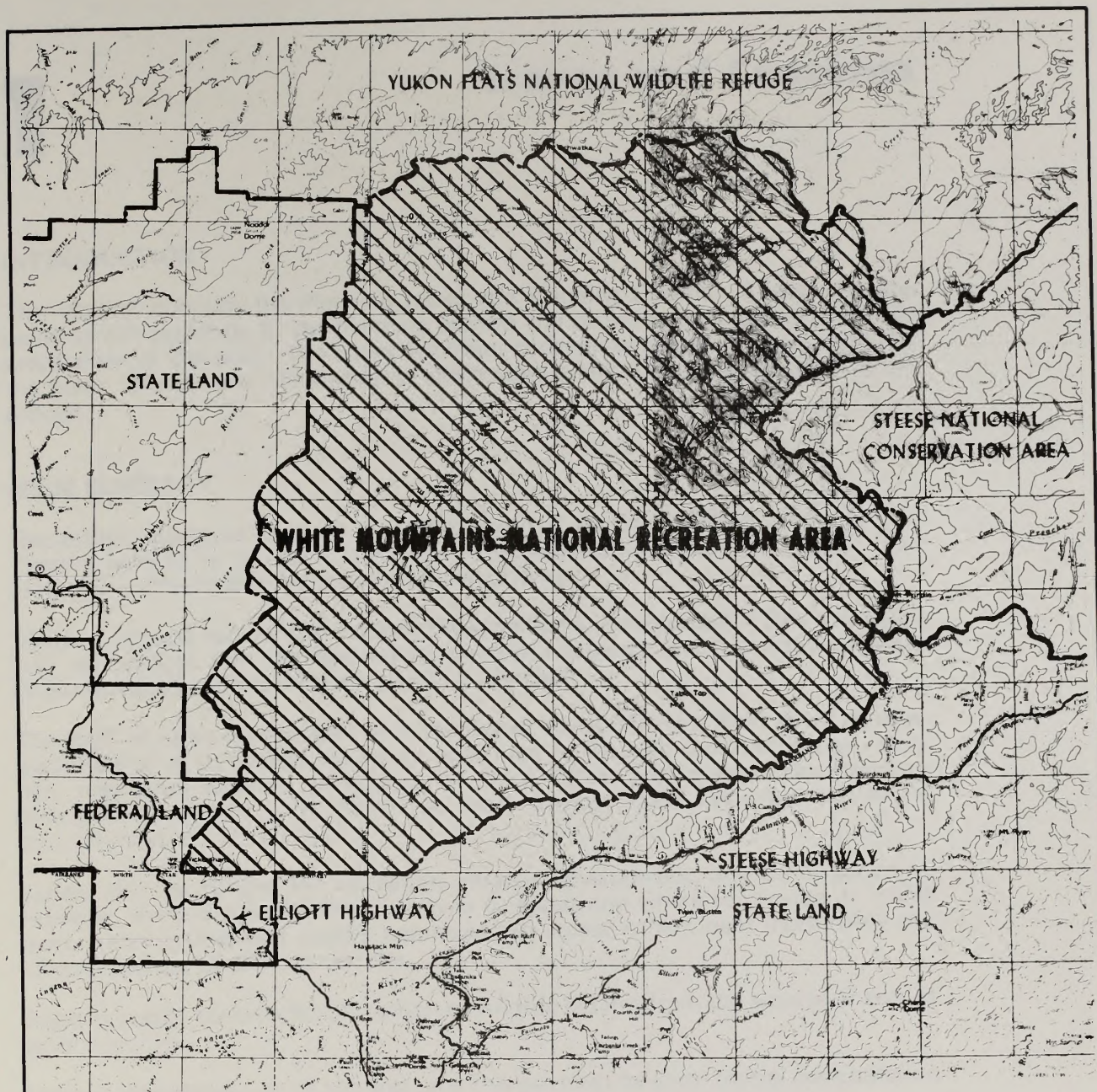
Description of Planning Process

This plan is being developed according to the Resource Management Plan (RMP) process as described in the Bureau of Land Management planning regulations (43 CFR 1600). The RMP process consists of nine basic steps:

1. Identification of Issues. Planning issues are the problems which must be resolved by the plan. Issues were identified through staff analysis and public participation.
2. Development of Planning Criteria. Planning criteria provide guidance for the remainder of the planning process. Draft criteria were developed by BLM staff and then made available for public review. Final criteria were written after consideration of all public comment.
3. Inventory. Inventory was based on the planning issues and planning criteria. Resource data necessary to make planning decisions was gathered by BLM staff.
4. Analysis of the Management Situation. Inventory data was used to produce the analysis of the management situation. This analysis provides an assessment of

the demand for certain resources, the capability of the resource to meet that demand, and opportunities to improve resource management.

5. Formulation of Alternatives. Each alternative is a possible land use plan. Four alternatives were developed, providing management options ranging from resource protection to resource development.
6. Estimation of Effects of Alternatives. The physical, biological, economic, and social impacts of each alternative were assessed. A public review of alternatives was part of this assessment.
7. Selection of Preferred Alternative. Based on a review of the four alternatives and their effects, the BLM State Director must select the alternative which he believes will provide the best overall management. In this case, the State Director selected a modification of one of the alternatives. This modification was developed into a fifth alternative and its effects were estimated. At this point, this document, the Draft Resource Management Plan and Environmental Impact Statement (DRMP/EIS), was prepared and released for public review.
8. Selection of Resource Management Plan. After considering all comments received on the DRMP/EIS, the State Director will decide upon the final plan. A Final Resource Management Plan and Environmental Impact Statement will be written and published.
9. Monitoring and Evaluation. Implementation of the plan will be monitored constantly. A formal review of the plan will be made at least every five years to determine whether or not revisions are necessary. If changes are required, the plan can be amended.



Map A



INTRODUCTION

This chapter contains the Planning Issues and Planning Criteria. These were prepared at the beginning of the planning process and provided basic guidance for the preparation of the plan. The issues are major concerns which must be addressed by the plan. The criteria are standards which were established for each phase of the process.

ISSUE SUMMARY

Recreation objectives must be developed to meet the requirements of PL 96-487. There is demand to provide a spectrum of recreational opportunities, ranging from primitive to developed types of recreational settings.

There is demand for mineral exploration and mineral development. This is likely to lead to conflicts with the demand for outdoor recreation and the need to protect resources which contribute to the public enjoyment.

The RMP must be coordinated with the Beaver Creek National Wild River Management Plan so as to protect the values which led to the wild river designation. Conflict may arise between protection of these values and mineral development, especially concerning such matters as water quality, visual resources, and access through the wild river corridor.

Access may be needed for recreation, mineral development, and other activities. However, there is disagreement over type of access and where to provide it: some users prefer limited and mostly nonmotorized access; others want more roads and unrestricted use of off-road vehicles.

There is public concern for protection of wildlife habitat from the adverse effects of other activities.

There is subsistence use of the area, and this use must be given special consideration under the terms of Section 810 of PL 96-487.

PLANNING CRITERIA**Criteria for Land Use Plan**

- Recreation will be regarded as the primary use.
- All alternatives will establish objectives based on the Recreation Opportunity Spectrum (ROS).
- All alternatives will provide for conservation of resources contributing to the public enjoyment, including:
 - Scenic values
 - Scientific values
 - Cultural values
 - Fish & wildlife

Water
Air quality
Primitive values
Geologic features

- All alternatives will include opportunities for mineral exploration, development, and extraction.
- All alternatives will be compatible with the Beaver Creek National Wild River Management Plan.
- All alternatives will provide for access which is consistent with designated land uses.
- Access will be managed primarily to achieve ROS objectives, subject to valid existing rights.
- Wildlife habitat management will be consistent with Alaska Department of Fish & Game management (ADF&G) objectives.
- Recreation objectives will be formulated in close cooperation with the State of Alaska.
- All alternatives will allow incidental resource uses which do not conflict with primary management objectives.
- The plan will be coordinated with the plans of adjacent land managers.

Criterion for Selection of Preferred Alternative

- Selection will be based on the combination of management actions which will provide for:

Maximizing public recreation opportunities

Mineral exploration and development which will promote, is compatible with, or will not significantly impair, public outdoor recreation

Continuation of existing uses which are consistent with recreation management

Compatibility with the Beaver Creek National Wild River Management Plan

Protection of endangered species and priority species and enhancement of their habitats

Acceptable management costs

Criteria for Estimating Effects

- All alternatives will include an analysis of the effects on:

Vegetation
Air quality
Water quality

Soil erosion
The wildlife resource, and use of that resource
Existing and historical access
Outdoor recreation and all values contributing to public enjoyment
Subsistence
Future development of existing mining claims
Threatened and endangered plants and animals
ADF&G management objectives and other State policies pertaining to fish and game
Cultural resources and protection of cultural resources
All existing uses, including mining operations
Plans of adjacent landowners or inholders
Social and economic well-being of interior Alaska residents
Visual resources

Criteria for Formulation of Alternatives

(Note: There will not be a separate alternative written for each criterion. A single alternative may satisfy six or seven criteria.)

- An alternative designed to give maximum protection to subsistence use will be formulated.
- An alternative will be formulated which allows recreational mining.
- An alternative will be formulated which provides maximum protection of existing resources by limiting mining and other surface-disturbing activities to current levels, subject to valid existing rights.
- An alternative will be formulated which allows mineral development when the effect on recreation and other resources is not significant or can be mitigated.
- An alternative will be formulated which will develop a program for full implementation of surface protection regulations.
- An alternative will be formulated which provides for identification, stabilization, and monitoring of cultural resources.
- An alternative will be formulated which provides for a spectrum of recreational opportunities, from primitive to developed.
- An alternative will be formulated which provides for increased access at put-in and/or take-out points on Beaver Creek.
- An alternative will be formulated which will exclude all uses which would impair recreation.
- An alternative will be formulated which will facilitate the study, establishment, and protection of research natural areas (ecological reserves) and outstanding natural areas.
- An alternative will be formulated which maximizes sport harvest and viewing opportunities of fish and wildlife, in accordance with management objectives of the ADF&G.
- An alternative will be formulated which will include recreation objectives which allow some other resource uses, such as mining, outside of the wild river boundary.

- Alternatives will be formulated in cooperation with ADF&G which provide a maximum to minimum range of:
 - Use of wildlife resources
 - Habitat protection and management
 - Management of threatened and endangered species and their habitats.
- Alternatives will be formulated which allow boundary adjustments which will (1) assist in conflict resolution, or (2) draw boundaries which correspond to drainage patterns or other geographical features.
- An alternative will be formulated which maintains current management levels for all resources, except in those cases where management practices can be made more economical without significant adverse impacts.
- An alternative will be formulated which is designed to allow the unit to undergo natural ecological changes with as little interference from man as possible.
- An alternative will be formulated which allows oil and gas leasing.
- An alternative will be formulated which allows mineral leasing in accordance with Section 1312(b) of the Alaska National Interest Lands Conservation Act.

Criteria for Management Situation Analysis

- Analysis of recreation information should provide a description of:
 - Past, present, and potential recreation activities
 - Principal recreation attractors
 - Current recreational settings (primitive, semi-primitive, etc.)
 - Level of demand for recreation activities
 - Conflicts between different types of recreation users
 - Conflicts between recreation and other uses
 - Values within the wild river boundaries which are most sensitive to activities outside the boundaries
 - The wild river viewshed
 - Human use of the wildlife resource
 - Economic value of recreation
- Analysis of minerals information must provide a description of:
 - Known and potential mineral resources
 - Mining operations currently in production
 - Conflicts between mining and other uses
 - General location of all mining claims
- Analysis of cultural resource information must provide:
 - A description of known cultural resources, including historic trails
- Analysis of forestry and vegetation information must provide a description of:
 - Species and locations of sensitive, threatened, and endangered plants
 - Plant communities and their distribution
 - Timber stands suitable for houselogs, firewood, or commercial use, and the existing and potential demand for such products

- Analysis of fire information must provide a description of:
 - Pattern of fire occurrence
 - Existing fire management, and the costs and effects of such management
 - All factors which affect fire occurrence and behavior
- Analysis of soil, water, and air information must provide a description of:
 - Soil characteristics
 - Water quality and flows of Beaver Creek and major tributaries
 - Current air quality
- Analysis of socioeconomic information must provide a description of:
 - Subsistence use, including species of plants and animals utilized, areas utilized, and a profile of subsistence users
 - Local communities and their relationship to the resources in the planning unit
 - The socioeconomic impact of current BLM resource management
- Analysis of wildlife information must provide a description of:
 - Species present and their distribution
 - Crucial habitats
 - Past and present occurrence of threatened and endangered species
 - Past, present, and potential use of major species
- Analysis of lands information must provide a description of:
 - Land status for all lands within or adjacent to the planning unit
 - Existing roads, trails, and aircraft landing areas, including a description of legal status, purpose, use level, mode of transport, and plans for improvement
- The Management Situation Analysis should provide a description of any known areas of unique scientific, cultural, or ecological value.

(Note: Level of detail for each section of the MSA will vary according to the significance of the subject.)

Criteria for Inventory

- Data needed to complete recreation inventory is as follows:
 - Field examinations of recreation use and potential
- Data needed to complete minerals inventory is as follows:
 - Mineral type, location, and estimated quality and quantity
- Data needed to complete cultural resource inventory is as follows:
 - Map and index of known cultural resources, including historic trails
 - Overview of prehistoric and historic activities
 - Inventory of historic cabins on Beaver Creek
 - Field check of areas of high probability for cultural resources

- Data needed to complete forest and vegetation inventory is as follows:
 - Land cover map
 - Location of timber stands
 - Determination of forest products use
 - Location of structures or other facilities which require protection
 - Fire behavior predictions
- Data needed to complete soil, water, air inventory is as follows:
 - Baseline water quality and quantity data
 - Air quality data
 - Soil types
- Data needed to complete socioeconomic inventory is as follows:
 - Subsistence use level and patterns
 - Socioeconomic importance of other resource uses
- Data needed to complete wildlife inventory is as follows:
 - Species present and distribution
 - Crucial habitats
- Data needed to complete lands inventory is as follows:
 - Updated land status maps
 - Map and narrative describing all access routes
- Inventory data will be plotted on reduced 1:63,360 scale maps. For purposes of public distribution or display at public meetings, necessary data will be transcribed to the 1:250,000 scale base map.

2

Description of Alternatives

INTRODUCTION

The Bureau's planning regulations require the preparation of several reasonable resource management alternatives, one of which must be continuation of present levels and systems of management (43 CFR 1610.4-5).

The Planning Team developed four alternatives (Alternatives A, B, C, and D) which were subject to public review. Based on public input and management considerations, a fifth alternative, Alternative E, was developed. This is the Preferred Alternative. It is the alternative which the Bureau believes will provide the best resource management for the WMNRA.

Many of the alternatives propose special management actions within the boundaries of Beaver Creek National Wild River corridor. The exact boundaries of the wild river corridor will be determined by the river management plan, which is not yet in effect. The boundaries depicted in this document are the boundaries which are proposed at this time. Proposed boundaries for the corridor are shown on Map 3-6 in Chapter 3.

Because of the complexity of wildlife habitat management, three general management strategies (intensive management, limited management, and special management areas) were developed. These terms are used in several of the alternatives and are defined below:

Intensive Management

- Cooperate with and assist the Alaska Department of Fish and Game in their management activities.
- Maximum involvement and input into environmental assessments and enforcement of surface management regulations (43 CFR 3809) to avoid negative impacts to crucial habitats.
- High level of wildfire management, prescription fire, and vegetation manipulation to produce optimum habitat conditions.
- Implement high level inventory, monitoring, and studies on priority species and habitats to gain needed knowledge for species management and input into land management decisions.
- Maximize wildlife human-use opportunities while maintaining quality user opportunities. Consider human-use restrictions only if compatible with Alaska Department of Fish and Game.

Limited Management

- Cooperate with and assist the Alaska Department of Fish and Game in their management activities.
- Case-by-case involvement and input into environmental assessments and enforcement of surface management regulations to identify and alleviate major impacts when possible.
- Use wildfire management to derive indirect benefits to improve or reestablish habitat when possible.
- Implement inventory and monitoring efforts as a support action for case-by-case involvement into environmental assessment and enforcement of surface management regulations.

Special Management Areas

Special Management Areas (SMAs) are habitat areas having high value to the reproduction, maintenance of populations and/or maintenance of habitat use opportunities for one or more priority species. Some factors known to be required for maintenance of populations and habitat use opportunities include suitable reproductive areas (denning, spawning, calving, etc.), high value cover (escape terrain), movement routes, winter range, and overwintering areas for fish. High intensity management will be applied to SMAs through BLM procedures such as the Habitat Management Plan (HMP), special stipulations on permits or leases, plans of operation, or other applicable administrative processes to facilitate management of the special habitat values for which the SMA was designated. Special stipulations for activities within an SMA would be developed on a case-by-case basis in response to a particular proposal. They may include seasonal use restrictions, location and design standards for roads and facilities, and rehabilitation requirements.

Recreation management within the WMNRA is also complex. Some of the alternatives propose development of recreational facilities outside the boundaries of the WMNRA. This was done because of the very limited access to the area. Trailheads and campgrounds on the Steese Highway, outside of the WMNRA, are necessary to facilitate recreational use of lands inside the boundaries.

Following is a description of various types of recreation facilities proposed in the alternatives:

- Trailhead Site: These sites will provide a parking area for vehicles, and a bulletin board or trailhead sign describing the trail.
- Campground: Standard BLM auto campground with bulletin boards, vault toilets, trash receptacles, and sites for overnight camping. A recreation project plan will be prepared for each campground, which will include details on the number and layout of sites, signing requirements, and feasibility of providing drinking water.
- Picnic Area: Standard BLM picnic area with bulletin boards, vault toilets, and trash receptacles. A recreation project plan will be prepared for each picnic site.
- Shelter: These public use shelters will be available both as an emergency shelter and overnight camping. They will be suitable for summer or winter use.

Trails: Both summer and winter trails have been proposed for construction. Most trail segments have been selected so as only to require physical marking on the ground or minor vegetative clearing, rather than more traditional and expensive trail construction methods. The proposed trails are in addition to existing trails which only require continued maintenance or minor signing.

DESCRIPTION OF ALTERNATIVE A

Summary

This is the "no action" alternative.

The management goal is to maintain the present condition of most resources without making major changes in user restrictions or management techniques.

Present levels and systems of resource management would be continued. This generally means a low level of management for most resources. Present trends would generally continue.

The Bureau would respond to requests for various actions, but would not usually initiate actions. Activities which are permitted now would continue to be permitted, and those which are prohibited now would continue to be prohibited. However, recreation would be regarded as the primary use of the area and would receive special consideration when actions which may affect recreation values are proposed.

Recreation Management

Recreation management would be aimed at maintaining existing Recreation Opportunity Spectrum (ROS) classifications, which are almost entirely primitive and semi-primitive nonmotorized (see Table 2-1). The ROS system is explained in Chapter 3. Existing trails and facilities would be maintained. New facilities could be developed if they would not change the existing ROS classification. Several new hiking trails would be constructed. Some of these facilities would be outside the unit; however, they would facilitate recreation use within the unit by providing access or serving as "jump-off points." Vehicle access will be provided by the existing U.S. Creek Road. Facility locations are shown on Map 2-1.

Non-Federal lands or interests in lands within the river corridor would be acquired whenever possible. Rights-of-way for recreational access across State lands would be acquired where necessary. Federal lands adjacent to the WMNRA near Wickersham Dome would be retained in Federal ownership and managed for recreation (see Map 2-5).

Recreation use would be managed through facility location and design, informational signs and brochures, and the existing low level of visitor services.

Table 2-1

Recreation Classifications in Alternative A

ROS Class	Approximate Acreage	% of total area
Primitive	742,530	74%
Semi-Primitive Nonmotorized	199,050	20%
Semi-Primitive Motorized	58,420	6%

Table 2-2

Recreation Facilities in Alternative A

Facility	Existing	Proposed	Totals
Campgrounds	1	0	1
Interpretive Sites	0	3	3
Trailheads	2	6	8
Hiking Trails	39 miles	153 miles	192 miles
Shelters	2	0	2

Minerals Management

All lands would remain closed to new location of mining claims and to all types of mineral leasing. Activities on existing mining claims would be regulated according to the surface management regulations (43 CFR 3809).

Requests for the extraction of sand, gravel, stone, or other salable minerals would continue to be handled on a case-by-case basis, in accordance with the mineral material disposal regulations (43 CFR 3600).

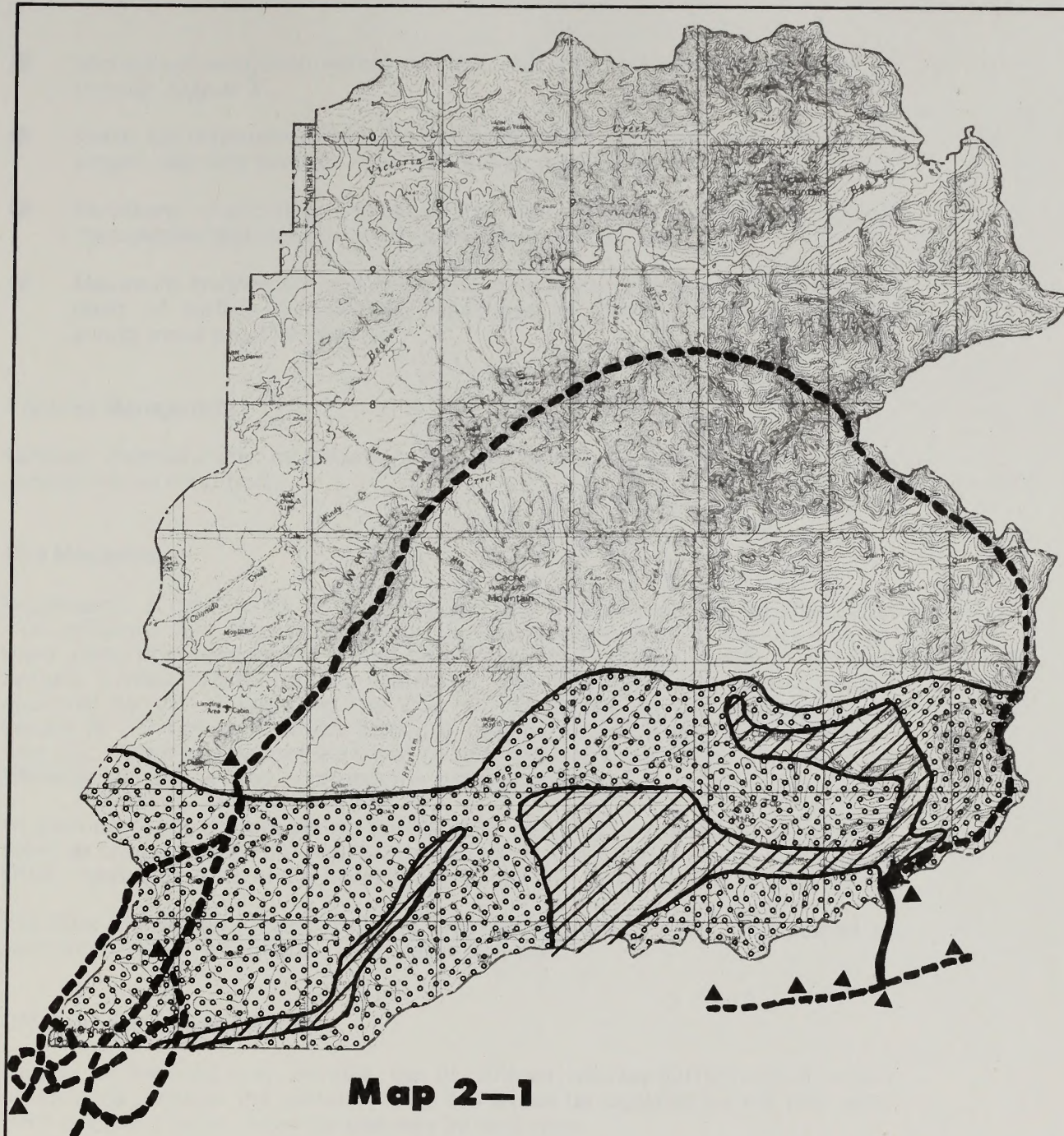
Mineral exploration could continue on all lands according to current rules and regulations. Exploration which involves no surface disturbance requires no advance approval. Surface-disturbing activities require the filing of a Plan of Operations, which may be approved or disapproved by the Area Manager on a case-by-case basis.

Wildlife Habitat Management

Under this alternative, present habitat conditions and trends would be allowed to continue. Caribou, Dall sheep, moose, and endangered species (peregrine falcon) would be considered priority species and would be given primary consideration in wildlife management. However, all species would continue to receive limited management, with the exception of the peregrine falcon. No direct habitat improvement actions would be undertaken. Inventory would be conducted in sufficient detail to provide case-by-case input into the habitat protection process.




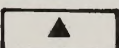
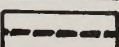
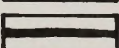
Management practices for peregrine falcons would be as follows:

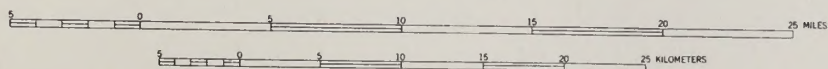
- Cooperate with and assist the U.S. Fish and Wildlife Service, Endangered Species Office, in their management activities and implementation of the Endangered Species Act and Recovery Plan.



Map 2-1

**Recreation
Alternative A**

- | | |
|---|------------------------------|
|  | Primitive |
|  | Semi-primitive non-motorized |
|  | Semi-primitive motorized |
|  | Recreation facilities |
|  | Trails |
|  | Vehicle access routes |



- Surface-use restriction within one-mile radius of nest sites between April 15 through August 31.
- Aerial use restrictions within one-mile radius and 1,500 feet above the ground around nest sites between April 15 through August 31.
- Inventory, monitoring, and studies to gain needed knowledge for species management and input into land management decisions.
- Maximum involvement and input into environmental assessment and enforcement of surface management regulations to identify, alleviate, mitigate, and/or avoid negative impacts.

Fisheries Management

Minimal inventory and monitoring would be performed to determine trends in general habitat condition.

Fire Management

Suppression action would be taken on all fires until completion of the Upper Yukon/Tanana Fire Management Plan. Following completion of the fire management plan, fire management would be carried out according to one of the four options (critical protection, full protection, modified action, and limited action) approved by the Alaska Land Use Council. These options are described in Appendix A. The areas in which particular options would be applied are shown on Map 2-2. These designations are based on the probability of a fire escaping from the WMNRA and on the need to protect life and property.

In addition to the options shown on Map 2-2, any inhabited cabins would be designated as critical protection sites and would receive first priority for fire suppression. Other habitable cabins and historic cabins might also be designated for protection.

The Fire Management Plan would be reviewed annually. It can be modified to accommodate new information or changing land uses.

Off-Road Vehicles and Aircraft

Outside of the wild river corridor, use of off-road vehicles (ORVs) would remain unrestricted. Within the corridor, ORV use would be regulated by the river plan. ORV users who cause undue damage may be held liable.

Aircraft landings would be unrestricted.

Rights-of-Way and Other Realty Actions

Applications for new use authorizations for roads, material sites, communication sites, or any other uses would be considered on a case-by-case basis. Any new facilities constructed by the Bureau would be protected with rights-of-way.

Visual Resource Management

Management would be aimed at generally maintaining present scenic quality, which is high. Protection would be provided by responding (through environmental assessments) to proposed actions which may threaten visual resources.

Disturbed areas (VRM Class 5) within the wild river corridor would be rehabilitated if feasible. In other areas, rehabilitation would not generally be undertaken.

Cultural Resource Management

BLM would identify any sites of potential National Register significance and allow for comment from the Advisory Council on Historic Preservation prior to any action which may impact such a site. No such sites have yet been identified.

Research Natural Areas and Areas of Critical Environmental Concern

No Research Natural Areas (RNAs) or Areas of Critical Environmental Concern (ACECs) would be designated. Designations of RNAs or ACECs would be considered if proposed by the public or other agencies.

Water Resource Management

The Bureau would cooperate with the Alaska Department of Environmental Conservation (ADEC) in water quality management. The current practice of collecting data on both water quality and quantity would continue when trips are made to the area.

Enforcement of surface management regulations (43 CFR 3809) would continue at current levels.

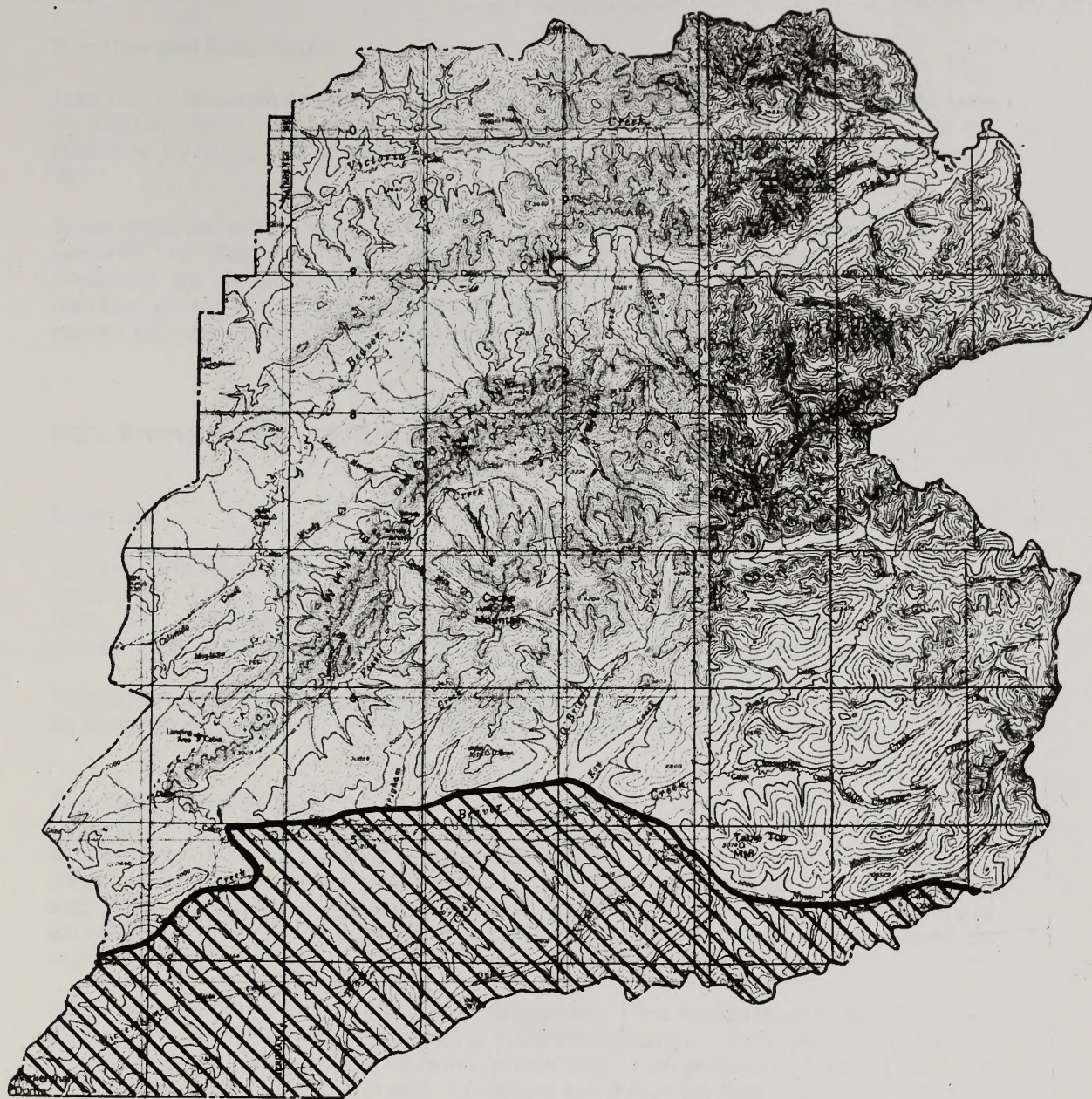
An instream flow study on Beaver Creek would be conducted to allow reservation of water rights needed to protect the values for which the wild river was established. BLM would respond to requests for floodplain determinations, water supply sources, and water projects related to proposed developments.

Forest Management

Applications for local use of forest products would be considered on a case-by-case basis.

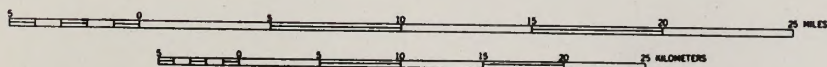
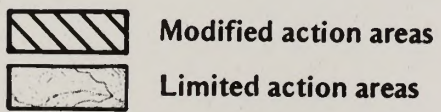
Subsistence

Subsistence use and subsistence resources will be protected through environmental assessments of proposed actions and the enforcement of surface management regulations (43 CFR 3809). Subsistence resources which are utilized outside of the WMRNA (such as caribou) will receive the same consideration as subsistence resources utilized within the WMNRA.



Map 2—2

Fire Management Alternative A



Sensitive and Rare Plants

Habitats of sensitive or rare plants will be protected from activities which might alter or destroy them. Management will be aimed at making it unnecessary to list the plants as threatened or endangered under the provisions of the Endangered Species Act.

Inventories for sensitive and rare plants will be conducted as funds are available or as required for clearances for proposed surface disturbing activities. Sites will be protected by modifying proposed actions which threaten sensitive or rare plant habitats or by denying those actions which cannot be modified. When actions cannot be modified or denied, plant material salvage will be attempted.

DESCRIPTION OF ALTERNATIVE B

Summary

Natural processes and environmental quality would generally be maintained or enhanced. This would require intensive management of most resources and activities. It would also require restrictions on some activities which are currently unrestricted, and a stronger effort to enforce surface management regulations.

Recreation would be regarded as the primary use, and recreation management would be aimed at maintaining the predominantly primitive character of the area.

Recreation Management

Management would be aimed at maintaining ROS classifications similar to existing classifications, with a slight increase in nonmotorized categories. Acreages within each class are shown in Table 2-3. Action would be taken to prevent or eliminate activities which conflict with those classifications. Emphasis would be placed on nonmotorized recreation.

Existing trails and facilities would be maintained. New facilities could be developed if they would not change the existing ROS classification. Facilities would also be provided where necessary for resource protection. Campgrounds, hiking trails, and picnic areas would be constructed. Locations are shown on Map 2-3.

Federal land adjacent to the WMNRA near Wickersham Dome would be retained in Federal ownership and managed for recreation. Also, land exchanges would be proposed to acquire State lands with high recreational value. (See Map 2-5.) Non-Federal lands or interests in lands within the river corridor would be acquired whenever possible. Rights-of-way for recreational access across State lands would be acquired where necessary.

Recreation use will be managed through facility location and design, and an increased level of visitor services, including signs, brochures, and field contacts.

Table 2-3

Recreation Classifications in Alternative B

ROS Class	Approximate Acreage	% of total area
Primitive	742,530	74%
Semi-Primitive Nonmotorized	207,050	21%
Semi-Primitive Motorized	50,420	5%

Table 2-4

Recreation Facilities in Alternative B

Facility	Existing	Proposed	Totals
Campgrounds	1	1	2
Picnic Sites	0	3	3
Interpretive Sites	0	6	6
Trailheads	2	8	10
Hiking Trails	39 miles	187 miles	226 miles
Shelters	2	3	5

Minerals Management

A strong effort would be made to enforce surface management regulations. More field inspections would be made.

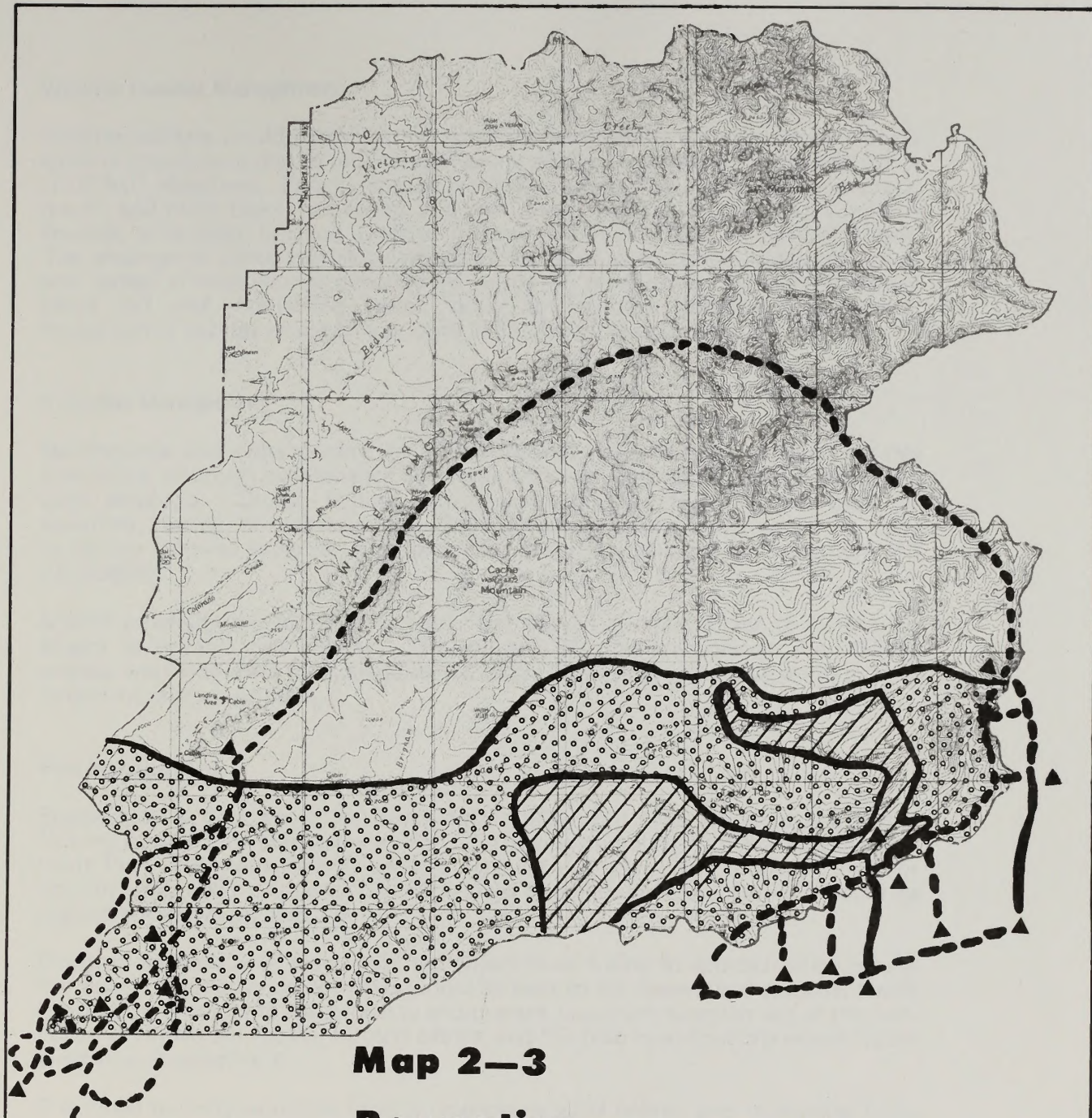
The Bureau would initiate examinations on claims to determine compliance with all mining laws. Priorities for such actions would be established according to the importance of the land for Federal programs.

Outside of the wild river corridor, holders of unperfected mining claims would be allowed to apply for a lease for those lands under the terms of Section 404 of PL 96-487. New regulations governing the leasing of formerly locatable minerals within the WMNRA would be put into effect. No lands other than existing claims would be open for leasing of locatable minerals.

All lands would remain closed to leasing of oil and gas, coal, or any other leasable minerals.



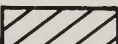
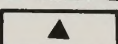
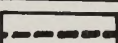
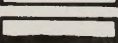
In accordance with mineral materials disposal regulations (43 CFR 3600), disposals of mineral materials would be made in support of other land use actions authorized by this plan; for example, in construction of recreational facilities. Disposals could also be made for uses associated with valid existing rights, if no feasible alternative exists.

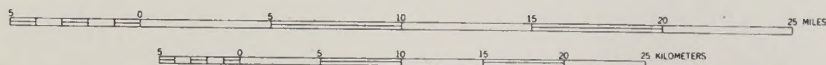
All lands would be open to mineral exploration. All exploration activities would require a Plan of Operations, which would be subject to the approval by the Area Manager.



Map 2-3

Recreation Alternative B

- | | |
|---|------------------------------|
|  | Primitive |
|  | Semi-primitive non-motorized |
|  | Semi-primitive motorized |
|  | Recreation facilities |
|  | Trails |
|  | Vehicle access routes |



Wildlife Habitat Management

Wildlife habitats would be subject to intensive management to maintain or increase wildlife populations and to facilitate achieving Alaska Department of Fish and Game (ADF&G) objectives. Priority species would be caribou, Dall sheep, moose, raptors, grizzly and black bears, furbearers, and small game. Habitat improvement would be through prescribed fire and wildfire management rather than mechanical means. The endangered peregrine falcon would be managed as described in Alternative A, and formal critical habitat designations would be established. Detailed inventory (level IV) and monitoring would occur to facilitate intensive management. Protection of habitat would be a priority throughout the entire unit.

Fisheries Management

Maintenance and enhancement of all fish habitat would be the objective of this alternative, although maintenance of crucial arctic grayling habitat would receive the most emphasis. Crucial habitat for grayling consists of those areas used for spawning, rearing, or overwintering. Consequently, a strong effort would be made to involve fisheries expertise in enforcement of surface management regulations (43 CFR 3809).

Stream rehabilitation techniques could be employed at Nome Creek to restore the stream as suitable fish habitat. The Bureau's Habitat Management Plan (HMP) process would be used to accomplish the work. Inventory would be performed to determine crucial use areas.

Fire Management

Suppression action would be taken on all fires until completion of the Upper Yukon/Tanana Fire Management Plan. Following completion of the Fire Management Plan, fire management would be carried out according to one of the four options described in Appendix A. The areas in which particular options would be applied are shown on Map 2-4.

Designations have been made with the objective of trying to approximate a natural fire regime. Suppression activities would be kept to the lowest level consistent with the need to protect life and property and prevent fires from escaping out of the unit. Policy on inhabited cabins, historic cabins, and fire plan modifications would be the same as in Alternative A.

Prescribed burning would be used to improve wildlife habitat and to manage fuels. Fuels would be managed in the southern part of the WMNRA to reduce the probability of large, severe fires in that area. Other areas where prescribed burning could be used would be identified as more information becomes available.

Prior to any prescribed burn, the area would be thoroughly investigated to identify any inhabited cabins, historical sites, or other critical protection sites, and appropriate measures would be taken to protect these sites.

Fuels management and other strategies would be identified which will reduce the wildfire hazard to structures which require fire protection.

Off-Road Vehicles and Aircraft

Management would be aimed at preventing erosion, adverse impacts to the predominantly primitive character of the area, or other resource degradation which may be caused by ORVs. Because use of light vehicles causes relatively few problems, such use would be largely unrestricted. Authorization could be granted for heavy vehicles to ensure access for miners, inholders, or others who may require special access. If such access routes must cross the wild river corridor, the number of crossing points would be limited to as few as possible. Crossing points would be selected so as to minimize adverse impacts, and would be authorized only if there were no economically feasible and prudent alternative.

Use of vehicles of less than 1,500 pounds gross vehicle weight (GVW) would be unrestricted. Operation of vehicles over 1,500 pounds GVW off of a valid right-of-way would require authorization by the Area Manager.

Aircraft use would be generally unrestricted, except for possible seasonal restrictions on certain wildlife use areas.

Rights-of-Way and Other Realty Actions

Generally, only those realty actions which promote land uses designated by this plan or which are necessary to protect valid existing rights would be allowed. Other actions could be allowed if they are compatible with designated land uses or if there are no reasonable alternatives.

As transportation needs become more clearly identified, the District Manager could exercise his authority to designate transportation corridors to eliminate proliferation of rights-of-way. Several users could be required to use the same road or trail, and to jointly maintain the road or trail.

Rights-of-way across the wild river corridor would be allowed if there is no economically feasible and prudent alternative. The number of crossing points would be kept to a minimum. Crossing points would be selected in consultation with the users and the Alaska Department of Transportation. Locations would be based on environmental considerations, engineering considerations, and economic feasibility.

Land exchanges would be proposed to acquire State lands outside of the present boundaries which have high recreation value. Federal lands outside of the boundaries with high recreation value would be retained in Federal ownership. These lands are identified on Map 2-5.

Any new facilities constructed by the Bureau would be protected with rights-of-way. Also, the Bureau would apply for rights-of-way across State lands to provide access to the unit where necessary.

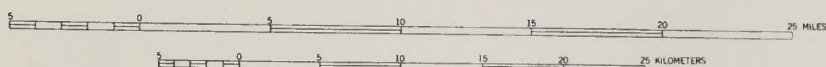
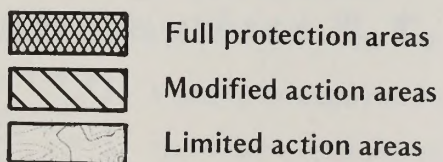
Visual Resource Management

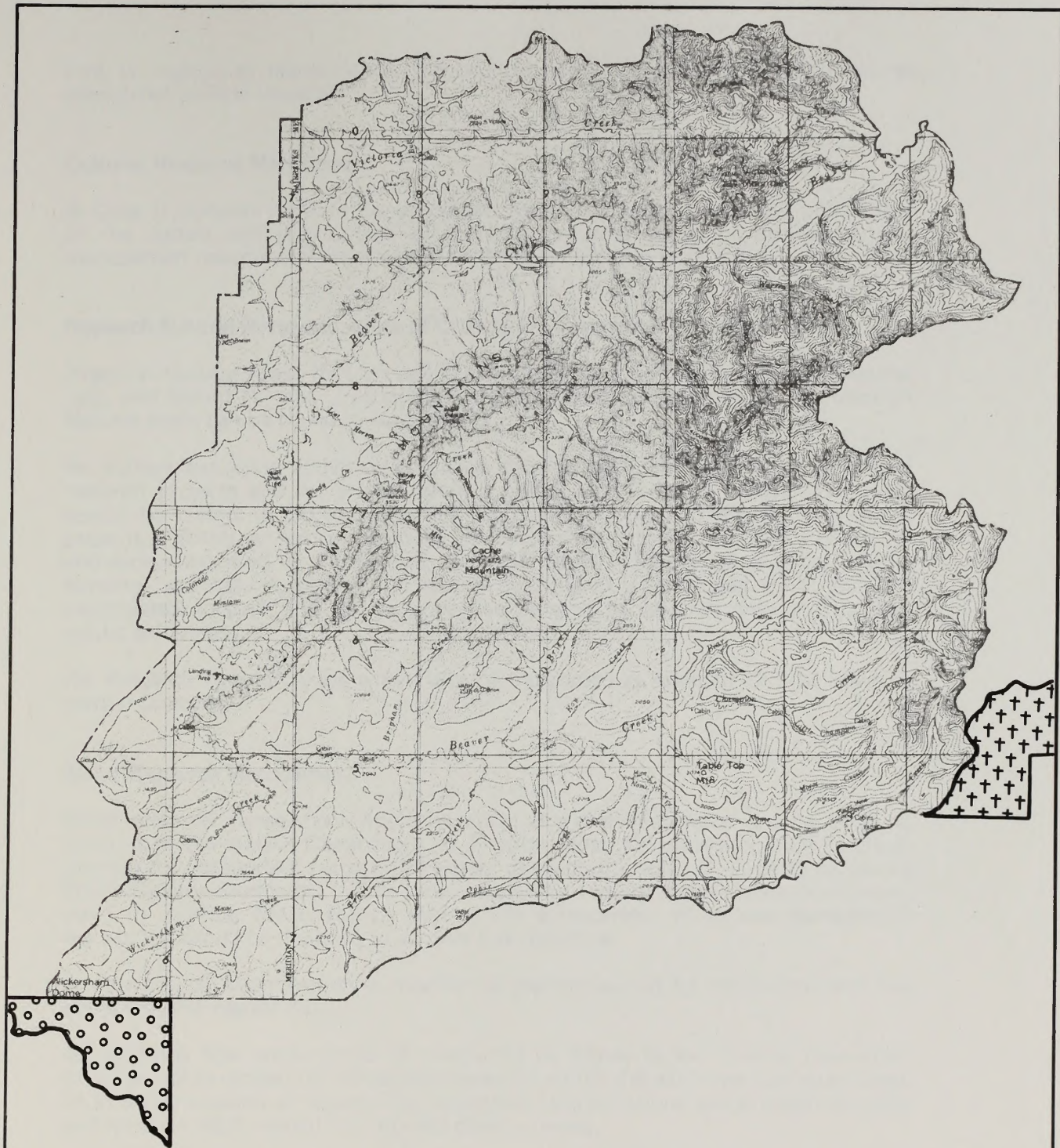
Present scenic quality would generally be maintained. Disturbed areas would be rehabilitated if feasible. Scenic quality would be protected (through environmental assessments and surface management regulations) by identifying and mitigating adverse impacts of proposed actions.



Map 2—4

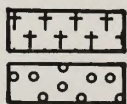
Fire Management Alternatives B,C,D and E





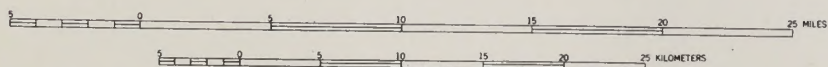
Map 2-5

Realty Actions Alternatives B, C, D and E



Land to be acquired through exchange

Land to be retained in Federal ownership



Fire or vegetation manipulation for wildlife habitat improvement would not be considered adverse impacts.

Cultural Resource Management

A Class II inventory would be conducted for the entire unit. A predictive model of the nature and distribution of cultural resources would be developed, and management recommendations would be made for cultural resources.

Research Natural Areas and Areas of Critical Environmental Concern

Research Natural Areas (RNAs) would be designated at Serpentine Slide, Limestone Jags, and Mount Prindle. Descriptions and boundaries of these proposed Research Natural Areas can be found in Appendix B.

No surface-disturbing activities would be allowed, within RNAs, except permitted research projects and mineral extraction under valid existing rights. The areas would be closed to off-road vehicles and camping to avoid disturbing research projects. Primitive campsites could be established outside the RNA boundaries and access improved in the form of developed trails, helispots, or airstrips. Hiking, hunting, and nature appreciation would be allowed. Developed trails could be constructed through the RNAs to reduce damage to research sites and increase public enjoyment.

All Research Natural Areas would also be designated as Areas of Critical Environmental Concern.

Water Resource Management

Water resource management would be aimed at maintaining water quality levels no lower than the Alaska Department of Environmental Conservation (ADEC) classification for "secondary recreation" (water use classification I.B. ii, State of Alaska Water Quality Standards). This would generally require maintenance or improvement of existing water quality levels. The enforcement of surface management regulations would be designed to achieve this objective.

A network of water resources monitoring stations would be established and will be visited on a regular basis.

An instream flow study would be conducted on Beaver Creek to allow reservation of water rights needed to protect the values for which the wild river was established. BLM would respond to requests for floodplain determinations, water supply sources, and water projects related to proposed developments.

Forest Management

Applications for local use of forest products would be considered on a case-by-case basis. Revegetation may be required if appropriate.

Subsistence

Subsistence would be protected through environmental assessments and enforcement of surface management regulations. Emphasis would be on the protection of existing subsistence resources, primarily furbearers, caribou, and other game animals.

Sensitive and Rare Plants

Inventories of all likely sensitive and rare plant habitats and studies of the plants found would be undertaken to facilitate determination of their status under the Endangered Species Act (ESA). This would provide information for management decisions that would avoid alteration or destruction of habitats which could lead to listing of the plants as threatened or endangered under the ESA.

Sites would be protected by modifying proposed actions which threaten habitats or by denying those actions which cannot be modified. When actions cannot be modified or denied, attempts would be made to salvage plant materials, especially ripe seed. In addition to salvage actions, attempts would be made to establish colonies in likely habitats where practicable.

DESCRIPTION OF ALTERNATIVE C

Summary

A mix of resource protection and resource development would be provided, based on identified needs and resource capabilities. Some resources, particularly wildlife habitat, would receive more intensive management. Recreation would be regarded as the primary use. Recreation management would provide for a variety of recreational opportunities, including both motorized and nonmotorized recreation.

Recreation Management

Within the wild river corridor and other designated areas shown on Map 2-6, the objective of management would be to maintain primitive ROS classifications. The area to be managed for primitive values includes the Beaver Creek viewshed, proposed Research Natural Areas, and areas of high scenic quality in the White Mountains. In other areas, management would allow motorized ROS classifications to develop. Table 2-5 shows approximate acreage in each class.

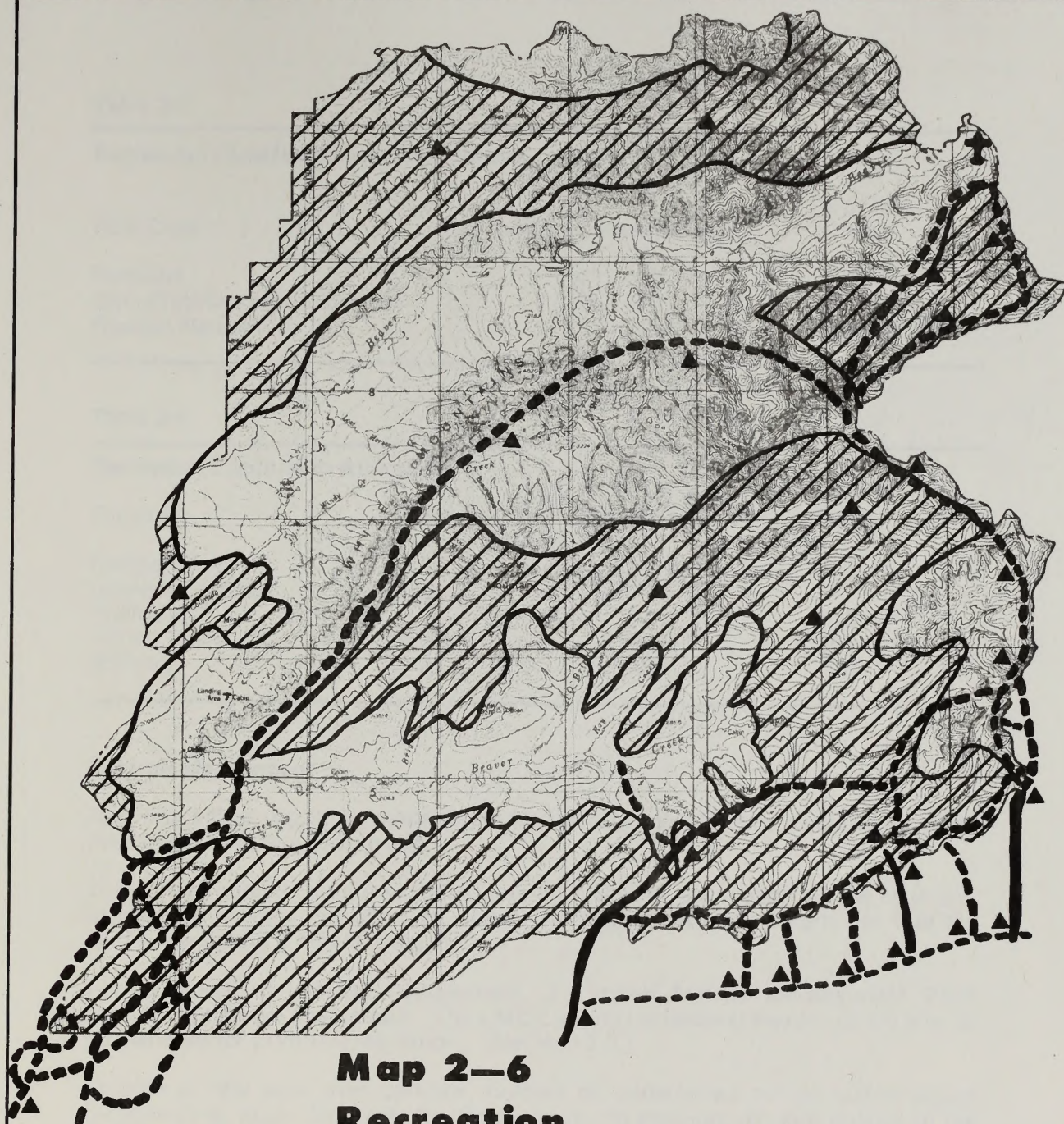
Existing trails and facilities would be maintained. New campgrounds and trails would be constructed. Cabins suitable for summer or winter use by small parties would be constructed to provide shelter for hunters, hikers, or other recreationists. Facility locations are shown on Map 2-6.

A small area suitable for gold-panning would be acquired or retained and managed for recreational mining.

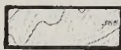
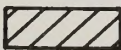
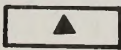
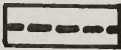
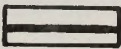

Access would be improved by encouraging construction of improved roads in some locations. Construction may be accomplished by working with the State of Alaska or with private development interests, such as miners.

Land exchanges would be proposed to acquire State lands with high recreational value. The Wickersham Dome area would be retained in Federal ownership. These areas are shown on Map 2-5. Non-Federal lands or interests in lands within the river corridor would be acquired whenever possible. Rights-of-way for recreational access across State lands would be acquired where necessary.

Recreation use would be managed through facility location and design, and an increased level of visitor services, including signs, brochures, and field contacts.



Map 2-6
Recreation
Alternative C

- | | |
|---|--------------------------|
|  | Primitive |
|  | Semi-primitive motorized |
|  | Recreation facilities |
|  | Trails |
|  | Vehicle access routes |
|  | Airstrip |

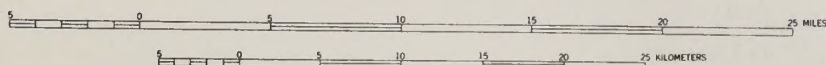


Table 2-5**Recreation Classifications in Alternative C**

ROS Class	Approximate Acreage	% of total area
Primitive	437,020	44%
Semi-Primitive Motorized	562,770	56%
Roaded Natural	210	less than 1%

Table 2-6**Recreation Facilities in Alternative C**

Facility	Existing	Proposed	Totals
Campgrounds	1	2	3
Interpretive Sites	0	7	7
Trailheads	2	11	13
Hiking Trails	39 miles	218 miles	257 miles
Shelters	2	18	20

Minerals Management

A strong effort would be made to enforce surface management regulations. More field inspections would be made.

The Bureau would initiate examinations on claims at the request of the claimant, in cases of flagrant unauthorized use, or if the Area Manager determines that the land is needed for a federal program.

For purposes of mineral management, a Limited Mineral Development Zone (LMDZ) would be maintained. The LMDZ would correspond exactly to the area to be managed for primitive recreation. (See Map 2-6.)

Outside of the wild river corridor, holders of unperfected mining claims would be allowed to apply for leases for those claims. In addition, all lands outside of the LMDZ would be open to new leasing of locatable minerals. Leasing of locatables would be governed by new regulations.

In accordance with the appropriate leasing regulations (43 CFR 3100), the entire unit would be opened to oil and gas leasing. However, no surface occupancy will be permitted within the LMDZ.

Coal or geothermal leasing is not permitted within a National Recreation Area (43 CFR 3201.1-6 and 43 CFR 3400.2).

All lands outside of the LMDZ would be opened to leasing of nonenergy minerals in accordance with the appropriate leasing regulations (43 CFR 3500).

Disposals of sand, gravel, stone, and other salable minerals under 43 CFR 3600 would be made only if compatible with other provisions of this land use plan.

All lands would be open to mineral exploration. All exploration activities would require a Plan of Operations, which would be subject to the approval of the Area Manager.

Table 2-7

Mineral Actions in Alternative C

Action	Approximate Acres Opened	% of total area
Leasing of Locatables	562,980	56%
Oil and Gas Leasing	1,000,000*	100%
Leasing of Nonenergy Minerals	562,980	56%

*Surface occupancy will not be allowed on a portion (437,020 acres) of this area.

Wildlife Habitat Management

Wildlife habitat would be managed to maintain or increase wildlife populations and to facilitate achieving ADF&G objectives. Priority species would be caribou, Dall sheep, moose, raptors, furbearers, small game, and grizzly and black bears. These species would receive intensive management. Other species would generally receive limited management.

Habitat improvement actions would include use of mechanical, wildfire, and prescription fire, as applicable. Endangered species habitat would be managed as described in Alternative A. Inventory (Level III-IV) and monitoring would facilitate intensive management objectives of priority species. A Special Management Area (SMA) would be maintained because of present and historical caribou, Dall sheep, moose, grizzly and black bear, raptor, and fish crucial habitats. Actions within the Special Management Area would be subject to special stipulations designed to maintain crucial wildlife values. The SMA is depicted on Map 2-7.

Fisheries Management

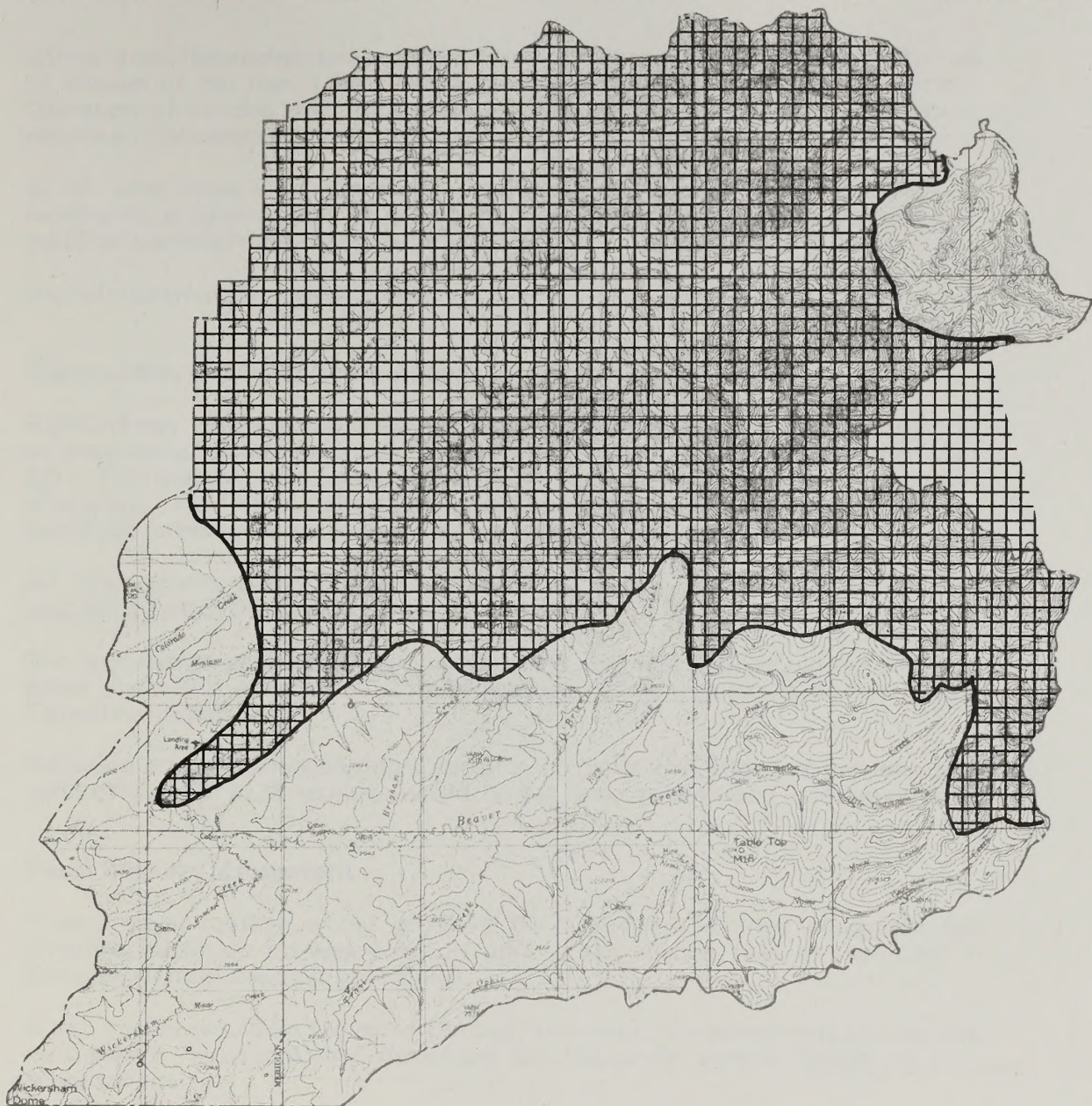
Same as Alternative B.

Fire Management

Same as Alternative B.

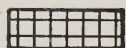
Off-Road Vehicles and Aircraft

ORV use which would impact areas designated for primitive recreation management would be limited. Motorized access would be generally unrestricted in other areas.

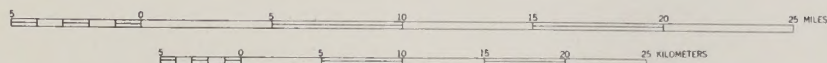


Map 2—7

Wildlife Alternatives C and D



Special management area



Within areas designated for primitive recreation management (see Map 2-6), use of vehicles of less than 1,500 pounds gross vehicle weight would be unrestricted. Operation of vehicles over 1,500 pounds GVW off of a valid right-of-way would require authorization by the Area Manager.

In all other areas ORV use would be unrestricted except on hiking trails. A monitoring program would be established, and ORV use may be limited further if significant problems are found to be occurring.

Aircraft use would be generally unrestricted.

Rights-of-Way and Other Realty Actions

Rights-of-way which would allow increased public access would be encouraged in all areas except those designated for primitive recreation management. (See Map 2-6.) Rights-of-way may be allowed to cross primitive areas if there is no reasonable alternative. Holders of rights-of-way would be required to allow public access for recreation unless there is a compelling reason to deny such access.

All other actions would generally be permitted if they are compatible with land uses designated in this plan.

The land exchanges proposed in Alternative B (see Map 2-5) would also be proposed under this alternative. The Wickersham Dome area would be retained in Federal ownership.

Policy on transportation corridors, crossing points in the wild river corridor, and rights-of-way for BLM facilities would be the same as described in Alternative B.

Visual Resource Management

Present scenic quality would generally be maintained in areas designated for primitive recreation management. In other areas, changes may be permitted if necessary to meet the goals of this plan.

Scenic quality would be protected (through environmental assessments and surface management regulations) by identifying and mitigating adverse impacts of proposed actions.

Disturbed areas within the wild river viewshed would be rehabilitated if feasible.

Fire or vegetation manipulation for wildlife habitat improvement would not be considered adverse impacts.

Cultural Resource Management

A Class II inventory would be conducted for the entire unit. A predictive model of the nature and distribution of cultural resources would be developed, and management recommendations will be made for cultural resources.

Historic structures would be evaluated for possible recreational use.

Research Natural Areas and Areas of Critical Environmental Concern

Research Natural Areas would be designated at Serpentine Slide, Limestone Jags, and Mount Prindle. They would be managed as described in Alternative B. No Areas of Critical Environmental Concern would be designated.

Water Resource Management

Management would be aimed at maintaining water quality levels no lower than the ADEC classification for "growth and propagation of fish" (water use classification I.C.). This would allow some degradation of water quality in certain areas. The enforcement of surface management and mineral leasing regulations would be designed to achieve this objective. In the case of limited enforcement capability, priorities would be established according to the value of the resources at risk.

A network of water resources monitoring stations would be established with emphasis on important fisheries habitats and areas of potential mineral development. Water resources information in upland areas would be collected where it would be of most value to wildlife resources.

An instream flow study would be conducted on Beaver Creek to determine the water rights needed to protect the values for which the wild river was established. BLM would respond to requests for floodplain determinations, water supply sources, and water projects related to proposed developments.

Forest Management

All areas except the Research Natural Areas would be open to timber harvest. Harvest in the wild river corridor must be consistent with the wild river management plan. Harvest within the viewshed of Beaver Creek would be designed to minimize visual impacts. Measures would be taken to promote revegetation after any surface disturbance.

Subsistence

Subsistence would be protected through environmental assessments.

Wildlife management would be intensified, which would benefit subsistence species as well as other species. (See wildlife section for details.)

Sensitive and Rare Plants

Same as Alternative B.

DESCRIPTION OF ALTERNATIVE D

Summary

Economic development and human use of resources would be encouraged. This would require intensive management of most resources and activities, with management aimed at facilitating use of those resources.

Recreation would be regarded as the primary use, and recreation management would be directed towards improved access and increased visitation.

Recreation Management

Primitive ROS classifications would be maintained within the river corridor, the proposed Research Natural Areas, and certain areas with high scenic quality or special wildlife values. Management would be aimed at permitting motorized ROS classifications in other areas.

Existing trails and facilities would be maintained. New campgrounds and trails would be constructed. Cabins suitable for summer or winter use by small parties would be constructed to provide shelter for hunters, hikers, or other recreationists. Facility locations are shown on Map 2-8.

A small area suitable for gold-panning would be acquired or retained and managed for recreational mining.

Access would be improved by encouraging construction of improved roads in some locations. Construction may be accomplished by working with the State of Alaska or with private development interests, such as miners. Also, an airstrip would be provided near the mouth of Victoria Creek if possible.

Land exchanges would be proposed to acquire adjacent State lands with high recreational value. The Wickersham Dome area would be retained in Federal ownership. These areas are shown on Map 2-5. Non-Federal lands or interests in lands within the river corridor would be acquired whenever possible. Rights-of-way for recreational access across State lands would be acquired where necessary.

Recreation use would be managed through facility location and design, and an increased level of visitor services, including signs, brochures, and field contacts.

Table 2-8

Recreation Classifications in Alternative D

ROS Class	Approximate Acreage	% of total area
Primitive	163,480	16%
Semi-Primitive Motorized	801,410	80%
Roaded Natural	35,110	3%

Table 2-9

Recreation Facilities in Alternative D

Facility	Existing	Proposed	Totals
Campgrounds	1	4	5
Picnic Sites	0	5	5
Interpretive Sites	0	8	8
Trailheads	2	11	13
Hiking Trails	39 miles	302 miles	341 miles

Minerals Management

All proposed actions are the same as in Alternative C except that the Limited Mineral Development Zone (LMDZ) would be considerably smaller. The LMDZ corresponds exactly to the area to be managed for primitive recreation. (See Map 2-8.)

Table 2-10

Mineral Actions in Alternative D

Action	Approximate Acres Opened	% of total area
Leasing of Locatables	836,520	83%
Oil and Gas Leasing	1,000,000*	100%
Leasing of Nonenergy Minerals	836,520	83%

*Surface occupancy would not be allowed on a portion (163,480 acres) of this area.

Wildlife Habitat Management

Wildlife habitat would be managed to maintain wildlife populations at or near present (1982) levels. Priority species for intensive management would be caribou, Dall sheep, moose, and raptors. Limited management for grizzly and black bears, small game, and furbearers would be undertaken. Habitat improvement actions would include use of mechanical, wildfire, and prescription fire, as applicable. Endangered species habitat would be managed as described in Alternative A. Inventory (level III-IV) and monitoring would facilitate intensive management of priority species. A Special Management Area (SMA) would be maintained because of present and historical caribou, Dall sheep, and fish crucial habitats. Actions within the SMA would be subject to special stipulations designed to maintain crucial wildlife values. The boundaries of the SMA are shown on Map 2-7.

Fisheries Management

Same as Alternative B.

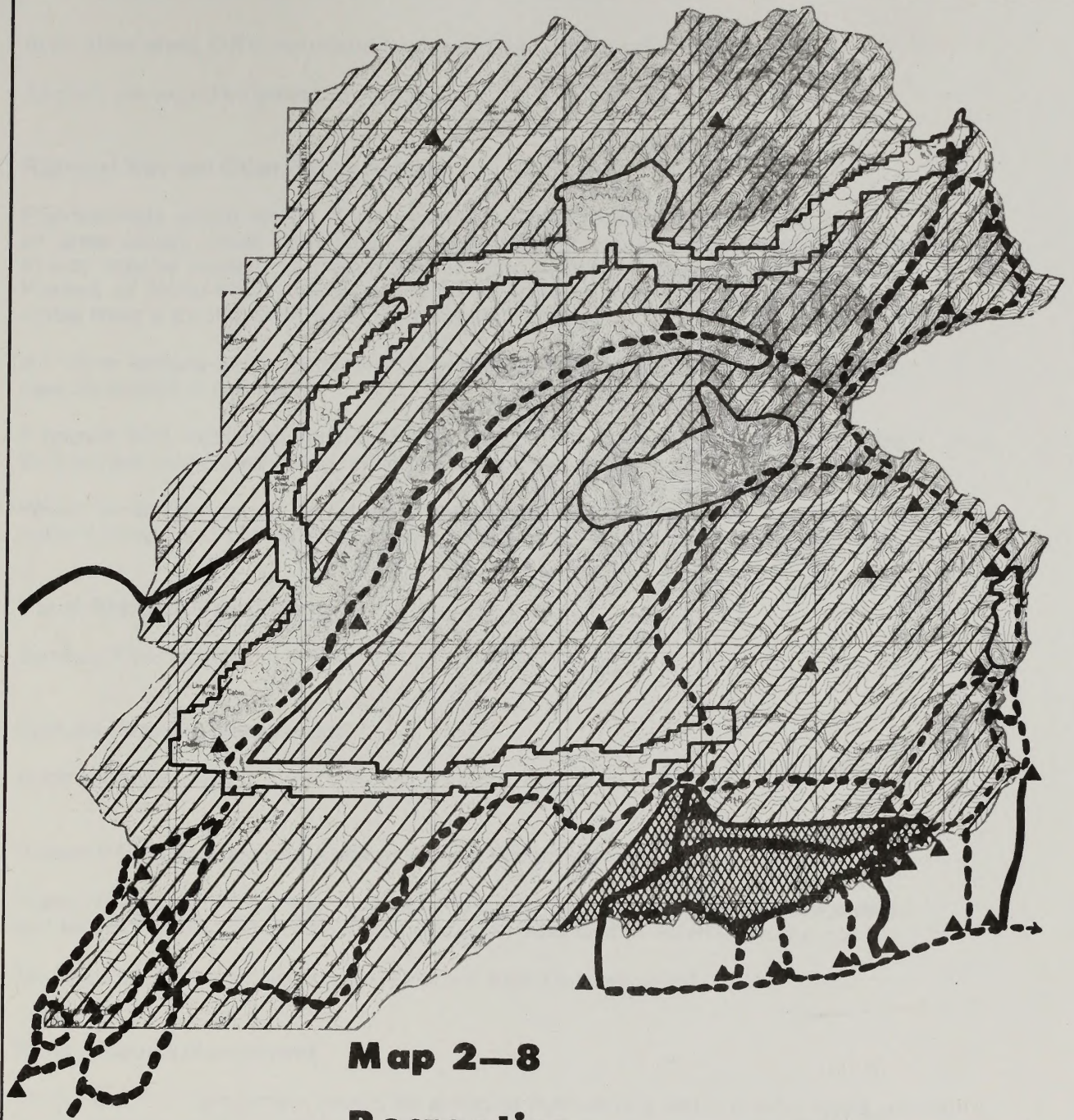
Fire Management

Same as Alternative B.

Off-Road Vehicles and Aircraft

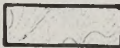


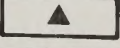
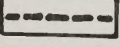
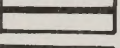
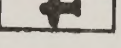
Motorized access would be encouraged in most areas.

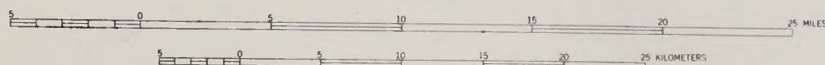
In areas designated for primitive recreation management, use of vehicles of less than 1,500 pounds gross vehicle weight would be unrestricted. Operation of vehicles over 1,500 pounds GVW off of a valid right-of-way would require authorization by the Area Manager.



Map 2—8

**Recreation
Alternative D**

- | | |
|---|--------------------------|
|  | Primitive |
|  | Semi-primitive motorized |
|  | Roaded natural |
|  | Recreation facilities |
|  | Trails |
|  | Vehicle access routes |
|  | Airstrip |



In all other areas, ORV use would be unrestricted except on hiking trails.

Aircraft use would be generally unrestricted.

Rights-of-Way and Other Realty Actions

Rights-of-way which would allow increased public access would be encouraged in all areas except those designated for primitive recreation management. Rights-of-way may be allowed to cross primitive areas if there is no reasonable alternative. Holders of rights-of-way would be required to allow public access for recreation unless there is a compelling reason to deny such access.

All other actions would generally be permitted if they are compatible with land uses designated in this plan.

Proposed land exchanges remain the same as in Alternative B (see Map 2-5). The Wickersham Dome area would remain in Federal ownership.

Policy on transportation corridors, crossing points in the wild river corridor, and rights-of-way for BLM facilities would be the same as described in Alternative B.

Visual Resource Management

Same as Alternative C.

Cultural Resource Management

Same as Alternative C.

Research Natural Areas and Areas of Critical Environmental Concern

Research Natural Areas would be designated at Serpentine Slide, Limestone Jags, and Mount Prindle. They would be managed as described in Alternative B.

No Areas of Critical Environmental Concern would be designated.

Water Resource Management

Water resource management would be aimed at maintaining water quality levels no lower than the ADEC classification for "growth and propagation of fish" (water use classification I.C.) within the wild river corridor or the classification for "industrial water supply" (water use classification I.A. iv) in all other areas. This would allow some degradation of water quality in certain areas in order to accommodate mining or other development. The enforcement of surface management and mineral leasing regulations would be designed to achieve this objective.

A limited network of water quality monitoring stations would be established around areas of proposed developments.

Instream flow studies would be conducted on Beaver Creek to determine water rights needed to protect the values for which the wild river was established. BLM would respond to requests for floodplain determinations, water supply sources, and water resources information related to proposed developments.

Forest Management

All areas except the Research Natural Areas would be open to timber harvest. Harvest in the wild river corridor must be consistent with the river plan. Harvest within the viewshed of Beaver Creek would be designed to minimize visual impacts. Measures would be taken to promote revegetation after any surface disturbance.

Subsistence

Subsistence would be protected through environmental assessments and enforcement of surface management regulations.

Human use of subsistence species would be facilitated by improved access.

Sensitive and Rare Plants

Same as Alternative B.

DESCRIPTION OF ALTERNATIVE E

Summary

This is the Preferred Alternative. It was developed following a public review and estimation of effects of Alternatives A, B, C, and D. Recreation would be regarded as the primary use. This alternative would provide a variety of recreational opportunities, including both motorized and nonmotorized recreation.

Recreation Management

Within the primitive areas shown on Map 2-9, the objective of management would be to maintain primitive ROS classifications. In other areas, management would allow motorized ROS classifications to develop.

A small area suitable for gold-panning would be acquired or retained and managed for recreational mining.

Access would be improved by encouraging construction of improved roads at several locations. Construction may be accomplished by working with the State of Alaska or with private development interests, such as miners. Also, an airstrip would be provided near the mouth of Victoria Creek if possible.

Land exchanges would be proposed to acquire adjacent State lands with high recreational value. Non-Federal lands or interests in lands within the river corridor would be acquired whenever possible. Federal lands outside of the unit near Wickersham Dome would be retained in Federal ownership and managed for recreation. These areas are shown on Map 2-5.

Recreation use would be managed through facility location and design, and an increased level of visitor services, including signs, brochures, and field contacts.

Existing trails and facilities would be maintained. New campgrounds and trails would be constructed. Cabins suitable for summer or winter use by small parties

would be constructed to provide shelter for hunters, hikers, or other recreationists. Facility locations are shown on Map 2-9. Where proposed trails cross State lands, rights-of-way would be acquired.

Facilities would be constructed as funding permits. Priorities are as follows:

First Priorities

U.S. Creek, Steese Highway:	Picnic, Interpretive, and Trailhead Site
Ridge Top:	Picnic, Interpretive, and Trailhead Site
Upper Nome Creek:	Picnic, Interpretive, and Trailhead Site
Wickersham Dome:	Interpretive Site
Perhaps Creek:	Trailhead Site
Cripple Creek Campground:	Trailhead Site
Upper Sourdough Creek:	Trailhead Site
Shelters at:	Wickersham Dome Area (3) (Trail Creek Trail Junction, Winter Trail, Summer Trail)
	Mt. Prindle (1)
Trails at:	Wickersham Dome Loops (31 miles)
	Davidson Ditch (Moose Creek to Cripple Creek) (12 miles)
	Mt. Prindle Loop (via Nome Creek and Champion Creek Ridge routes) (23 miles)
	Perhaps Creek (3 miles)
	Grouse Creek (4 miles)
	Moose Creek (3 miles)
	Southern Ridgetop (Moose Creek to U.S. Creek) (10 miles)

Second Priorities

Ridge Top:	Campground
Perhaps Creek:	Picnic and Trailhead Site
Upper Sourdough Creek:	Interpretive Site
Wickersham Dome:	Vault Toilet
Moose Creek:	Trailhead Site
Grouse Creek:	Trailhead Site
Shelters at:	Fossil Creek (1)
	Trail Creek-O'Brian Creek Trail (1)
	Bear Creek (2)
	Quartz Creek (2)
Trails at:	White Mountain (2)
	White Mountain (58 miles)
	Davidson Ditch (Cripple Creek to Sourdough Creek) (4 miles)
	Mt. Prindle Loops (8 miles)
	Table Top Mountain (8 miles)

Third Priorities

Upper Sourdough Creek:	Campground
Lower Nome Creek:	Picnic and Trailhead Site
McKay Creek-Steese Highway:	Interpretive and Trailhead Site
Shelters at:	Victoria Creek (2)
	Lime Peak Northeast (3)
	Colorado Creek (1)

Trails at: Lime Peak Northeast (38 miles)
Davidson Ditch (Moose Creek to McKay Creek) (8 miles)
Mt. Prindle to Lime Peak (16 miles)

The number and type of facilities are the same as those proposed in Alternative C. (See Table 2-6.) The acreage to be maintained in each ROS classification are shown in Table 2-11.

Table 2-11

Recreation Classifications in Alternative E

ROS Class	Approximate Acreage	% of total area
Primitive	293,080	29%
Semi-Primitive Motorized	706,920	71%
Roaded Natural	210	less than 1%

Minerals Management

Implementation of surface management regulations would be improved. More field inspections would be made.

The Bureau would initiate examinations at the request of the claimant, in cases of flagrant unauthorized use, or if the Area Manager determines that the land is needed for a Federal program.

A Limited Mineral Development Zone (LMDZ) would be maintained to insure protection of the wild river, areas of high scenic value, and other values which contribute to public enjoyment. The LMDZ would correspond exactly to the area where a primitive ROS classification would be maintained (see Map 2-9).

Outside of the wild river corridor, holders of unperfected mining claims would be allowed to apply for leases for those claims. In addition, all lands outside of the LMDZ would be open to new leasing of locatable minerals. Leasing of locatables would be governed by new regulations.

In accordance with the appropriate leasing regulations (43 CFR 3100), all lands outside the LMDZ would be opened to oil and gas leasing. Coal or geothermal leasing is not permitted within a National Recreation Area (43 CFR 3201.1-6 and 43 CFR 3400.2).

All lands outside of the LMDZ would be opened for leasing of nonenergy minerals in accordance with appropriate leasing regulations (43 CFR 3500).

Disposals of sand, gravel, rock, and other salable minerals under 43 CFR 3600 would be made only if compatible with other provisions of this land use plan.

All lands would be open to exploration. Surface-disturbing activities would require the filing of a Plan of Operations which will be subject to the approval of the Area Manager.

Table 2-12

Mineral Actions in Alternative E

Action	Approximate Acres Opened	% of total area
Leasing of Locatables	706,920	71%
Oil and Gas Leasing	706,920	71%
Leasing of Nonenergy Minerals	706,920	71%

Wildlife Habitat Management

Wildlife habitat would be managed to maintain or increase wildlife populations and to facilitate achieving ADF&G objectives. Priority species would be threatened and endangered species, caribou, Dall sheep, moose, grizzly and black bears, and all species of raptors, furbearers, and small game. These species would receive intensive management. Other species would generally receive limited management.

Habitat improvement actions would include use of mechanical, wildfire, and prescription fire, as applicable. First priority for prescribed burning would be upper Beaver Creek. Inventory (level III-IV) and monitoring would facilitate intensive management objectives of priority species.

Endangered species habitat would be protected as described in Alternative A.

A Special Management Area has been identified (see Map 2-10), based on present and historical caribou, Dall sheep, moose, grizzly and black bear, raptor, and fish crucial habitats. High intensity management would be applied to SMAs through BLM procedures such as the Habitat Management Plan, special stipulations on permits or leases, plans of operation, or other applicable administration processes to facilitate protection of special habitat values.

Fisheries Management

Fisheries would be managed to facilitate achieving ADF&G objectives.

Maintenance and enhancement of all fish habitat would be the objective of this alternative although maintenance of crucial arctic grayling habitat would receive the most emphasis. Crucial habitat for grayling consists of those areas used for spawning, rearing, or overwintering. Fisheries expertise would be used in implementation of surface management regulations (43 CFR 3809).

Stream rehabilitation techniques may be employed at Nome Creek to restore the stream as suitable fish habitat. The Bureau's Habitat Management Plan (HMP) process would be used to accomplish the work. Inventory would be performed to determine crucial use areas.

Fire Management

Suppression action would be taken on all fires until completion of the Upper Yukon/Tanana Fire Management Plan. Following completion of the Fire Manage-

ment Plan, fire management would be carried out according to one of the four options described in Appendix A. The areas in which particular options would be applied are shown on Map 2-4.

Policy on inhabited cabins, historic cabins, and fire plan modifications would be the same as in Alternative A.

Prescribed burning would be used to improve wildfire habitat consistent with Habitat Management Plans and to manage fuels. Fuels would be managed in the southern part of the WMNRA to reduce the probability of large, severe fires in that area. Other areas where prescribed burning would be used would be identified as more information becomes available.

Prior to any prescribed burn, the area would be thoroughly investigated to identify any inhabited cabins, historical sites, or other critical protection sites, and appropriate measures would be taken to protect these sites. Fuels management and other strategies would be identified which will reduce the wildfire hazard to structures which require fire protection.

Off-Road Vehicles and Aircraft

ORV use which would impact areas identified for primitive recreation management would be limited. Motorized access would be generally unrestricted in other areas.

Within areas identified for primitive recreation management, use of vehicles of less than 1,500 pounds gross vehicles weight would be unrestricted. Operation of vehicles over 1,500 pounds GVW off of a valid right-of-way would require authorization by the Area Manager. Crossing the wild river corridor would be allowed if there is no economically feasible and prudent alternative. The number of crossing points would be kept to a minimum.

In all other areas ORV use would be unrestricted except on designated hiking trails, which will be closed to ORV use. A monitoring program would be established, and ORV use may be limited further if necessary for the protection of fragile areas.

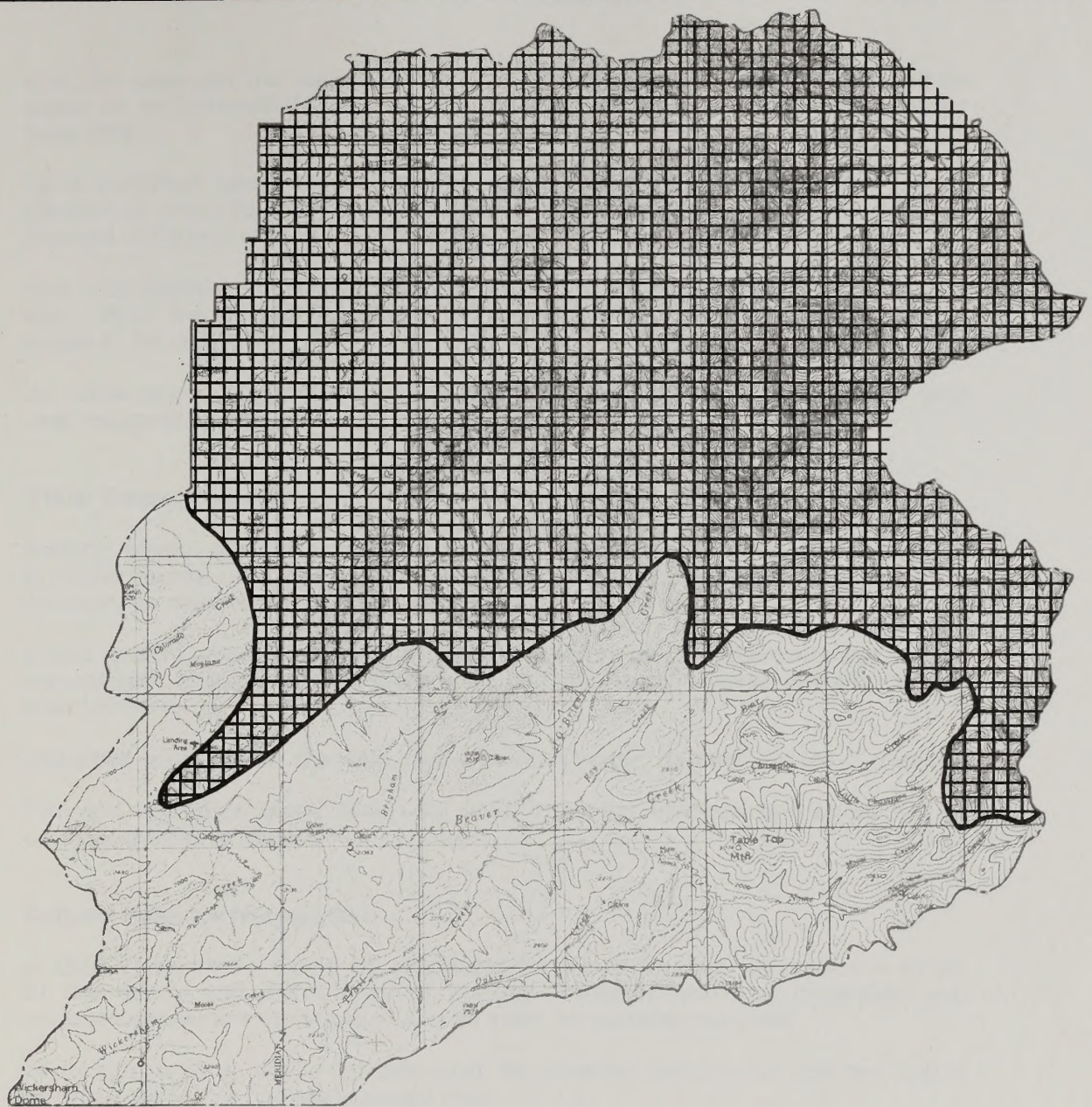
Aircraft use would be generally unrestricted.

Rights-of-Way and Other Realty Actions

Rights-of-way which would allow increased public access would be encouraged in all areas except those where primitive ROS Classifications are to be maintained. Rights-of-way may be allowed to cross primitive areas if there is no reasonable alternative. Holders of rights-of-way would be required to allow public access for recreation unless there is a compelling reason to deny such access. All proposed rights-of-way will be evaluated for their effects on recreational values.

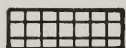
As transportation needs become more clearly identified, the District Manager may exercise his authority to designate transportation corridors to eliminate proliferation of rights-of-way. Also, several users may be required to use the same road or trail, and to jointly maintain the road or trail.

Rights-of-way across the wild river corridor would be allowed if there is no economically feasible and prudent alternative. The number of crossing points would be kept to a minimum. Crossing points would be selected in consultation

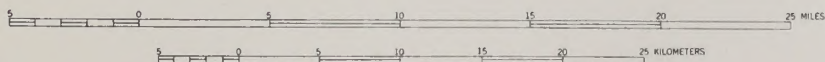


Map 2—10

Wildlife Alternative E



Special management area



with the users and the Alaska Department of Transportation. Locations would be based on environmental considerations, engineering considerations, and economic feasibility.

Land exchanges would be proposed to acquire State lands outside of the present boundaries which have high recreation value. The Wickersham Dome area would be retained in Federal ownership. These areas are identified on Map 2-5.

Any new facilities constructed by the Bureau would be protected with rights-of-way. Also, the Bureau may apply for rights-of-way across State lands to provide access to the unit.

All other actions would generally be permitted if they are compatible with land uses designated in this plan.

Visual Resource Management

Present scenic quality would generally be maintained in areas designated for primitive recreation management. In other areas, changes may be permitted if necessary to meet the goals of this plan.

Scenic quality would be protected (through environmental assessments and surface management regulations) by identifying and mitigating adverse impacts of proposed actions.

Disturbed areas within the wild river viewshed would be rehabilitated if feasible.

Fire and vegetation manipulation for wildlife habitat improvement would not be considered adverse impacts.

Cultural Resource Management

A Class II inventory would be conducted for the entire unit. A predictive model of the nature and distribution of cultural resources would be developed, and management recommendations would be made for cultural resources.

Historic structures would be evaluated for possible recreational use and would be protected in the Fire Management Plan.

Research Natural Areas and Areas of Critical Environmental Concern

Serpentine Slide (4,274 acres), Limestone Jags (5,170 acres), and Mt. Prindle (3,147 acres in this unit) would be designated as Research Natural Areas. Locations and boundaries are shown in Appendix B. No surface-disturbing activities would be allowed, except permitted research projects. The areas would be closed to off-road vehicles and camping to avoid disturbing research projects. Natural processes, including wildfire, would be allowed to continue with as little interference as possible. Primitive campsites could be established outside the RNA boundaries and access improved in the form of developed trails, helispots, and airstrips. Hiking, hunting, and nature appreciation would be allowed. Developed trails could be established through the RNAs to reduce damage to research sites and increase public enjoyment.

No Areas of Critical Environmental Concern would be designated.

Water Resource Management

The Bureau would cooperate with the Alaska Department of Environmental Conservation (ADEC) in water quality management. The current practice of collecting data on both water quality and quantity would continue when trips are made to the area.

An instream flow study on Beaver Creek would be conducted to determine water rights needed to protect values for which the wild river was established. BLM would respond to requests for floodplain determinations, water supply sources, and water projects related to proposed developments.

Forest Management

All areas except the Research Natural Areas would be open to timber harvest. Harvest in the wild river corridor must be consistent with the river plan. Harvest within the viewshed of Beaver Creek would be designed to minimize visual impacts. Measures would be taken to promote revegetation after any surface disturbance.

Subsistence

Subsistence use and subsistence resources would be protected through careful management. Management would be coordinated with adjacent land managers and with the Subsistence Division of ADF&G, as required by Section 810 of Public Law 96-487.

Sensitive and Rare Plants

Sensitive or rare plant habitats would be protected from activities which may alter or destroy them, and would be managed in a way that would make listing as threatened or endangered unnecessary.

Inventories for sensitive and rare plants would be conducted as funds are available or as required for clearances for proposed surface disturbing activities. Sites would be protected by modifying proposed actions which threaten sensitive or rare plant habitats or by denying those actions which cannot be modified. When actions cannot be modified or denied, plant material salvage would be attempted. Salvage of ripe seed is most desirable.

Table 2-13

SUMMARY COMPARISON OF ALTERNATIVES

Planning Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
1. Recreation Objectives	Maintain existing situation. Mostly primitive recreation opportunities. Few facilities or services.	Mostly primitive recreation opportunities. Higher level of visitor services. Some use restrictions.	44% of unit to remain primitive. Remainder to be managed for motorized recreation. More facilities.	16% of unit to remain primitive. Remainder to be managed for motorized recreation. Highest level of facility development.	29% of unit to remain primitive. Remainder to be managed for motorized recreation. Same level of facilities as Alternative C.
2. Mineral Development	Maintain existing situation. No lands opened to any type of mineral leasing.	Existing claims may be converted to leases. No other leasing.	56% of unit open to leasing of locatable and nonenergy minerals. 100% open to oil and gas leasing.	84% of unit open to leasing of locatable and nonenergy minerals. 100% open to oil and gas leasing.	71% of unit open to leasing of locatable minerals, nonenergy minerals, and oil and gas. No leasing in primitive areas.
3. Coordination with Management of Wild River	Most of unit would be managed much like the river corridor (primitive).	Most of unit would be managed much like the river corridor (primitive).	All lands adjacent to river corridor would be managed much like corridor.	River corridor would be primitive. Adjacent lands would be semi-primitive.	River corridor and areas of high scenic quality visible from river would be semi-primitive.
4. Access	Discourage improved access. No restrictions on off-road vehicles (ORVs).	Discourage improved access. Large ORVs prohibited in primitive areas (most of unit).	Encourage improved access outside of primitive areas. Large ORVs prohibited in primitive areas.	Encourage improved access outside of primitive areas. Large ORVs prohibited in primitive areas.	Encourage improved access outside of primitive areas. Large ORVs prohibited in primitive areas.
5. Wildlife	Continue existing level of wildlife management.	More intensive wildlife management. Habitat improvement.	Intensive management and habitat improvement. Special Management Area to protect wildlife values.	Intensive management and habitat improvement. Special Management Area to protect wildlife values.	Intensive management and habitat improvement. Special Management Area to protect wildlife values.
6. Subsistence	Maintain present subsistence opportunities	Intensive management of subsistence resources.	Intensive management of subsistence resources.	Intensive management of subsistence resources.	Coordination with State of Alaska and adjacent land managers. Intensive management of subsistence resources.

3

The Affected Environment

This chapter describes the pertinent physical, biological, and social characteristics of the White Mountains National Recreation Area. It is not intended to be an encyclopedic description. Emphasis is placed on elements which can be affected by BLM management. For those who are unfamiliar with interior Alaska, a general description of the natural and manmade environment can be found in "Alaska Regional Profiles: Yukon Region" (Lidia L. Selkregg, University of Alaska, Arctic Environmental Information and Data Center).

The information presented in this chapter is summarized from more detailed information available at the Fairbanks District Office of BLM.

VEGETATION

Vegetation within the unit is almost entirely the natural vegetation of interior Alaska. There are no agricultural areas or areas affected by urbanization. Vegetation along some of the creeks has been disrupted by placer mining.

Land cover for the unit has been mapped by manual interpretation of Landsat imagery. Seven cover types were found to occur, and are described below.

Alpine Tundra

High elevation, well-drained treeless areas characterized by dwarf shrubs, forbs, graminoids, and lichens. The vegetation cover varies from 0 to 90 percent. Plants commonly seen include mountain avens, Lapland cassiope, blueberry, dwarf willows, moss campion, lousewort, sedges, and a variety of lichens.

Low Scrub

Made up of low shrubs (less than five feet) and dwarfed tree species. This cover type is usually dominated by dwarf birch, resin birch, willows, blueberry, lowbush cranberry, and other ericaceous shrubs. Near timberline there may be significant quantities of dwarfed white spruce. Higher, drier sites may be dominantly dwarf shrubs. Trees may comprise up to 10 percent of the cover.

Tussocks

Flat to moderately sloping areas with poorly drained soils, supporting a cover of sedge tussocks. This type usually includes scattered grasses. This type may contain scattered, stunted spruce. Tussocks may be found as an understory for coniferous woodland, coniferous forest, and low scrub.

Coniferous Forest

Lowland coniferous forest is usually black spruce, with scattered ericaceous shrubs, willows, and willow stringers along drainages. Some areas have scattered larch. Ground cover is usually tussocks, lichens, and mosses. Sphagnum mosses are common on the colder, wetter sites where permafrost is close to the surface. These areas may be transitional to coniferous woodland.

Upland coniferous forest is composed of both black spruce and white spruce. The more commonly seen understory plants include: blueberry, lowbush cranberry, crowberry, Labrador tea, dwarf birch, resin birch, willows, sedge tussocks, mosses, and lichens.

Riverine Coniferous Forest

Stands of large white spruce with occasional deciduous species: paper birch, aspen, balsam poplar, alder, and willow.

Mixed Forest

A mixture of broadleaf and needleleaf trees where each contributes at least 25 to 75 percent of the tree cover. In interior Alaska, this may be black or white spruce, or both, mixed with paper birch or aspen. Valley bottom mixes may include balsam poplar. Understory varies considerably with site. Mixed forest occurs from riverine sites to dry highlands.

Conifer Woodland

This type is usually composed of black spruce with 10 to 25 percent crown cover. Understory vegetation is tussocks with low shrubs such as dwarf birch, blueberry, willows, and Labrador tea. Sphagnum mosses are common. The woodland is laced with stringers of willow and coniferous forest, usually along drainages. This type contains areas of dwarf spruce scrub, and areas too sparse to qualify as woodland.

There is no commercial exploitation of vegetation anywhere in the unit. Miners, local residents, and recreationists take small amounts of wood for fuel. Blueberries and cranberries are often harvested for personal consumption.

Much of the southern and western part of the WMNRA has a high fire potential. Fuels are continuous, and there are few natural barriers to fire spread. An un-suppressed wildfire in this area could reach 50,000 to 60,000 acres in size, and could spread outside of the unit.

There are no federally listed Threatened or Endangered (T&E) plants in Alaska at this time. BLM has assigned a designation of "sensitive" to some plants that are considered candidate species for T&E listing by the federal government. BLM policy mandates these plants be accorded the full protection of the Endangered Species Act.

No extensive inventory for sensitive or rare plants has been conducted in the WMNRA. Small areas with convenient access have been examined by botanists.

Based on known habitat requirements, the following plants which are on BLM Alaska's sensitive plant list, may occur in the area.

Name	Known Habitat	Potential Classification
<i>Aster yukonensis</i>	Riverbeds & gravel bars	T
<i>Montia bostockii</i>	Wet alpine meadows & moist centers of frost scars	E
<i>Smelowskia borealis</i> var. <i>villosa</i>	Calcareous screes at high elevations	T
<i>Smelowskia pyriformis</i>	Calcareous screes at high elevations	E
<i>Taraxacum carneocoloratum</i>	Alpine slopes & coarse well-drained slopes	T

In addition to the sensitive list, there is a list of plant taxa considered to be rare. In most cases, we do not know enough about these taxa to determine whether they may be candidate species or not.

Two rare taxons, *Draba paysonii* and *Oligotrichum falcatum*, have been found near Mount Prindle. Another rare taxon, *Andreaeobryum macrosporum*, has been found in the White Mountains. *Coccocarpia erythoxyli*, a lichen usually found in temperate or tropical climates, has also been found in the White Mountains.

SOILS

Three soil associations are found within the unit (US Soil Conservation Service, 1979). These are broad associations, identified largely through aerial observations. There may be considerable variation in soil properties within each association.

Descriptions of each association are provided below.

Typic Cryochrepts - High rounded ridges and hills separated by broad sloping valleys dominate the landscape. Soils in this association formed from a variety of parent materials. The dominant soils on the hills consist of very gravelly material weathered from local rock. In the valleys, the principal soils formed from loamy sediment washed from the surrounding hills. The soil is not suitable for cultivation.

Pergelic Cryaquepts-Pergelic Cryochrepts - This association occupies unglaciated steep hills and mountains. Most of the association is above treeline. Most soils were formed in very gravelly or flaggy colluvial material weathered from bedrock. They are generally shallow on steep side slopes, but gradually become deeper toward the base of the slopes. This association is too cold and steep for cultivation and has only scattered areas of trees suitable for harvesting.

Lithic Cryorthents - At higher elevations, the mountains are very steep and rocky, but valleys and lower side slopes are generally less steep. Ice-rich permafrost underlies soils at the lower elevations. Soils at higher elevations are too shallow over bedrock for ground ice to form.

The WMNRA is generally underlain by moderately thick to thin permafrost (Selkregg, no date). Permafrost is absent around large creeks and some other areas.

Permafrost is ground which remains frozen for two years or more. Although commonly referred to as an object, it is really a condition which may occur in any type of material. The portion of the ground which lies above permafrost and is subject to annual freezing and thawing is called the active layer.

Surface relief directly influences permafrost, since the amount of solar radiation received depends on degree and direction of slope. The type of ground surface is also an important determinant of permafrost conditions. Permafrost is generally thickest in fine-grained soils such as silt and clay, due to their low thermal conductivity.

Vegetation primarily affects permafrost by shading and insulating the ground from solar radiation. Moss and peat are especially important insulators. Severe damage can occur when moss or peat cover is disturbed. Such disturbance may cause the permafrost to thaw, possibly resulting in local subsidence, slumping, drainage diversion, and erosion.

The effects of permafrost degradation depend upon soil type and topography. Ice-rich silt on a slope will be more severely affected than a gravel deposit on level ground.

Thawed soil on a slope may be subject to rapid erosion, gullyng, mudslides, or solifluction (the slow creep of a soil mass downhill). On level ground, thawing may produce thermokarsts, which are pits formed when underground ice masses melt. Thermokarsts can be quite large, and may become ponds or lakes.

Permafrost also affects ground water supplies. It can block the flow of water and slow the recharging of aquifers. Also, wells drilled through permafrost will freeze up if not used frequently or protected with a heating device.

WATER RESOURCES

Surface Water

The WMNRA is located in the Upper Yukon Region of the interior of Alaska. The rugged mountains and rolling hills of the White Mountains are the major influencing factors on the water resources of the area. Beaver Creek is the major drainage, with many small tributaries flowing in from the mountains and hills. These tributaries are generally high gradient creeks which run fast and clear. Beaver Creek flows for 111 miles through the planning area, eventually flowing into the Yukon River.

Beaver Creek is a clear, non-glacial river formed by the joining of two headwater streams draining the White Mountains. Upper reaches flow through mountain valleys where the channel is sometimes braided and relatively swift. Beyond Victoria Creek, it enters the Yukon Flats where the velocity declines and the channel meanders across the Yukon River floodplain.

Water levels can fluctuate markedly throughout the year. The relatively short summers concentrate about 80 percent of the annual runoff into less than five months. High flows occur in the summer months, May through September; low flows during the winter months, October through April. In May, the ice is broken up by the higher flows resulting from snowmelt. On the larger streams, (such as

Beaver Creek) the peak flow for the year usually occurs within one or two weeks after break-up. Throughout the rest of the summer, rains usually sustain a relatively high discharge. The discharge varies on the small tributaries in response to local storms and temperature changes. Peak discharge occurs from snowmelt following break-up of the ice. Since the area is underlain in many areas by permafrost, infiltration losses are at a minimum, which increases the flood flows during the summer months.

Streams in most of the smaller basins probably freeze completely during the winter. During this period, when there is little or no snowmelt or rain, the largest contribution to the stream flow is from groundwater discharge in the channels of the larger streams. There is at least one creek which remains open through the winter and which is assumed to be spring fed. This inflow to Beaver Creek can create a stretch of open water on Beaver Creek.

The magnitude of the spring flood peak is dependent upon the amount of accumulated snow and the temperature sequence during the spring melt period. A large snowpack over the basin will give a large volume of runoff during the spring; however, if the temperatures increase gradually, the flood peak will not be abnormal. If early spring temperatures are colder than normal and then rise rapidly for a prolonged period, the flood peak will be extremely high. Flooding at this time is aggravated by ice jams, not only causing inundation over banks above the ice jams, but also downstream when the ice breaks up. Rain floods can occur during the period from June to September. Although heavy rainfalls are uncommon, it is possible for a rainfall of one or two inches to cause moderate flooding. When rain augments snowmelt runoff and the ground is frozen, the floods have very high peaks and large runoff volumes.

Water quality in the area is generally very good. The data available for Beaver Creek is scanty and consists of only scattered analyses. Suspended sediment levels are low to moderate, with transport rates of about 10 to 300 mg/l of sediment under natural conditions. Mining operations in the headwaters of Beaver Creek can cause great increases in the sediment load. Chemical water quality is also very good. Dissolved solids range from about 5 to 200 mg/l. Some tributaries to Beaver Creek flow a reddish or brown color, which is caused by the presence of iron or organic compounds in solution. The water is generally acceptable for consumption, but care must be taken to prevent infection by bacteria and parasites which occur naturally.

Ground Water

The extent and thickness of permafrost limits the availability of ground water. The general availability of ground water in the WMNRA is estimated to be less than 10 gallons per minute (Balding, 1976). However, availability may be much greater in localized ice-free areas.

Water Use

Water use in the area consists of instream use for recreation by float trips, and diversion of water and impoundments for placer mining.

There are eight water rights filings in the WMNRA. These filings are all associated with mining activities in the headwaters of Beaver Creek on Ophir, Nome, and Champion Creeks. The total amount of water currently appropriated from these drainages equals approximately 20 cfs (cubic feet per second). All of these

appropriations have seasonal use restrictions of 214 days per year or less. It is assumed that the actual water use in the area is greater than 20 cfs, as some mine operations may not have yet filed for water rights. Water rights information is kept on file by the State of Alaska, Department of Natural Resources.

AIR QUALITY

There is currently no information on air quality for the WMNRA. Because there are few industrial operations in the area, the only "pollutants" which occur in the area are fugitive dust from unvegetated river bars, forest fire smoke, dust from mining access roads, and smoke from cabins.

Air quality is, therefore, excellent except when smoke from a major fire is found in the area.

Forest fire smoke can originate both from fires within the WMNRA and from adjacent areas. No information about origins of smoke exists, but it is likely that smoke from much of the Alaskan interior can drift into the area under the right conditions. Usually, the only adverse effect from such smoke is interference with landing fixed-wing airplanes because of reduced visibility. On rare occasions, smoke may be dense enough to cause breathing difficulties in some people.

WILDLIFE

The WMNRA provides habitat for caribou, moose, Dall sheep, grizzly bear, black bear, furbearers, small game (grouse, ptarmigan, and hare), raptors, waterfowl, and numerous species of small mammals and birds. Species descriptions and distribution maps can be found in "Alaska's Wildlife and Habitat" (Alaska Department of Fish and Game, 1978).

Caribou are migratory animals. Most of the caribou which are seen within the WMNRA are part of the Fortymile herd, which migrates across interior Alaska and into Canada. A few caribou, called the White Mountains resident group, remain in the area all year rather than migrate with the Fortymile herd into Canada. In 1982, some caribou from the Porcupine herd also used the area.

The size of the Fortymile herd has fluctuated greatly over past decades. The herd size is now relatively small (about 10,000 animals) as compared to past years, but appears to be increasing. The habitat is capable of supporting many more caribou than currently make use of it.

Parts of the WMNRA have been used as caribou calving areas in past years (see Map 3-1). The WMNRA also provides some of the summer range and some of the winter range utilized by the Fortymile herd. The exact locations of areas used by caribou may change from year to year, as herd size fluctuates or migration routes change.


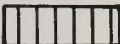
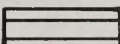
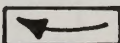
Moose density within the WMNRA is low and calf mortality is high. Predation by wolves may be an important factor in mortality. Moose habitat has deteriorated as fire suppression has improved. Fire is necessary to prevent browse areas from evolving into mature spruce forest.

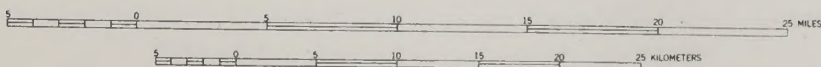
Dall sheep are found in some of the more mountainous areas of the WMNRA (see Map 3-2). Population is low and has declined in recent years. The habitat is lacking

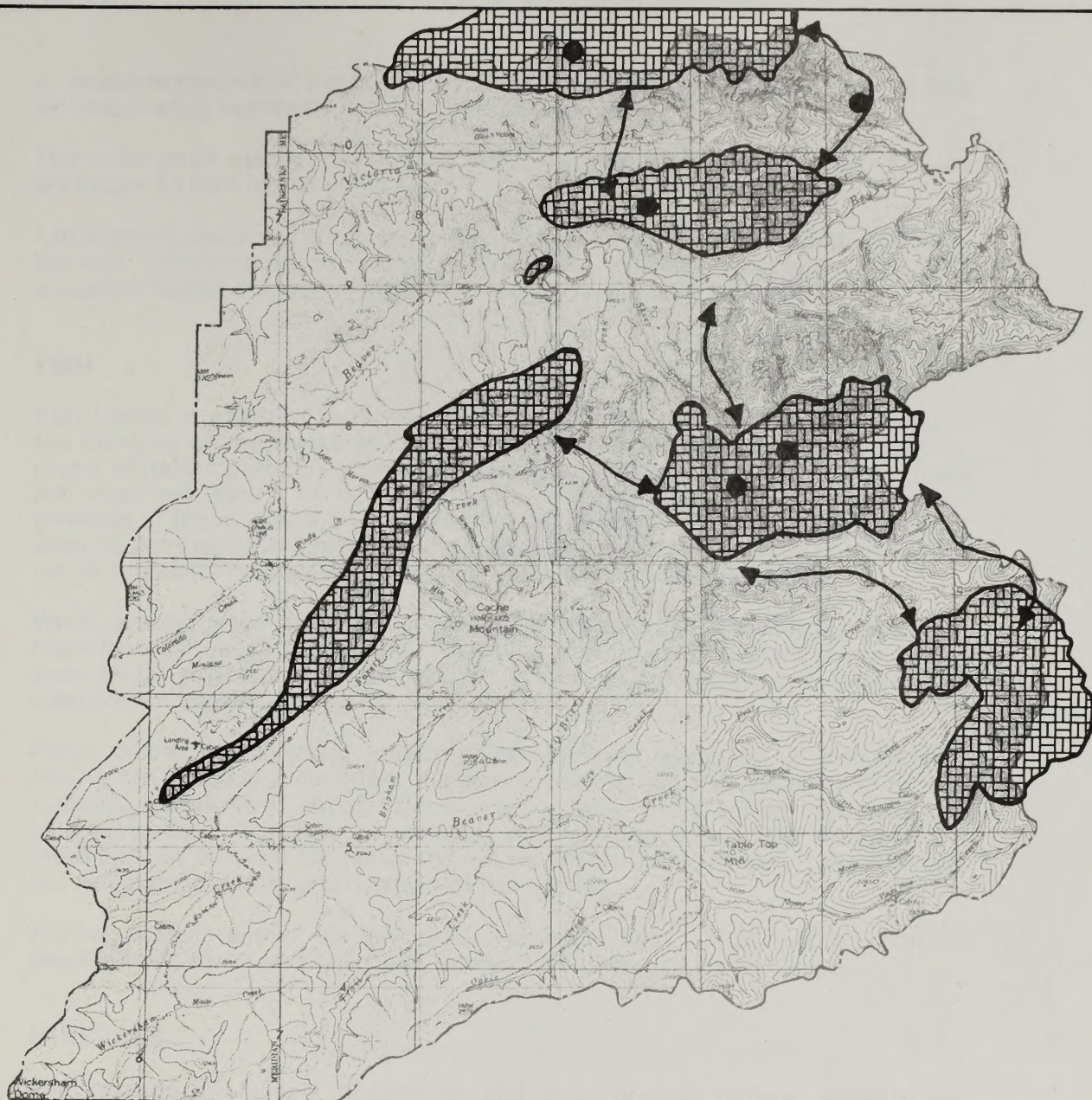


Map 3-1

Caribou


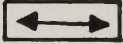
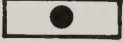
-  Winter range 1982-83
-  Summer range 1982
-  Possible calving 1982
-  Fall movement 1982

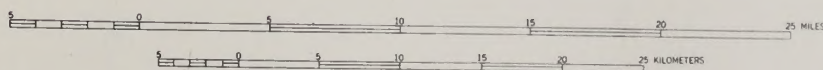




Map 3—2

Dall Sheep

-  Known use areas
-  Suspected or known movement routes
-  Mineral licks



in escape terrain, which makes the sheep more vulnerable to predation. Habitat may be deteriorating as conifers encroach into alpine areas.

One endangered species, the peregrine falcon, is found within the WMNRA. Falcons are known to have nested in the area.

Little data is available concerning populations or trends of other wildlife species in the area. Most populations appear to be healthy. However, suppression of wildfire is causing habitat changes which are detrimental to a number of species.

FISH

Fish habitat is confined to Beaver Creek and its tributaries. Fish species found in the portions of the creeks which lie within the WMNRA include arctic grayling, round whitefish, burbot, northern pike, slimy sculpin, and longnose sucker. There are unverified reports of salmon in upper Beaver Creek. One sheefish has been collected in Beaver Creek, but is considered an anomaly. With the exception of the slimy sculpin and the longnose sucker, species descriptions and distribution maps can be found in "Alaska's Fisheries Atlas" (McLean and Delaney, 1978).

Water quality, water quantity, and physical condition of the stream bottom are important features of fish habitat. Spawning areas, rearing areas, and overwintering areas are all regarded as crucial habitat. The extent and locations of these crucial areas are not known at present.

Placer mining has adversely impacted some fisheries, especially on Nome Creek. Mining has physically disturbed the stream bottom and has caused siltation and turbidity downstream. Siltation covers gravel beds, which are an important part of fish habitat. Turbidity adversely affects fish populations and also makes it more difficult to catch fish, since the fish are unable to see the lure. Overall impact is a reduction in quality and quantity of fish habitat.

Fishing pressure within the WMNRA is generally light. Most fishing occurs on Beaver Creek, and is associated with recreational floating of Beaver Creek.

MINERALS

The location of mineral occurrences and areas of high mineral potential are delineated on Map 3-3 and Map 3-4.

In terms of known value and production levels, gold is the most important mineral in the WMNRA. Gold was discovered in the vicinity in 1910. Placer gold deposits are found along the headwaters of Beaver Creek. No lode gold deposits have been discovered, but there is a potential for lode deposits (US Bureau of Mines, 1978). The quantity of remaining gold reserves is unknown.

Uranium and rare earths have been located at Mt. Prindle. Lead and zinc occur in the Lime Peak area, and anomalous amounts of uranium and tin have also been found there. There is a deposit of rare earths and uranium at Cache Mountain, with showings of lead, zinc, molybdenum, tin, nickel, and silver. Lead, zinc, and copper have been found at Mt. Schwatka. Anomalous concentrations of platinum group minerals have been found in the White Mountains. Information available to the Bureau does not delineate the extent or value of these deposits.

Two of the minerals found in the WMNRA, gold and zinc, are considered critical minerals (Bundtzen, Eakins, and Dillon, 1980).

In addition to discoveries already made, the potential for future discoveries is considered good. The WMNRA lies in a highly mineralized zone which has had relatively little exploration. Gold and silver lodes may exist in the area. The potential for discovering additional deposits of lead, zinc, or other minerals is high (US Bureau of Mines, 1978).

Oil and gas potential for the WMNRA is generally low. The most promising part of the unit for oil and gas is the area adjacent to the Yukon Flats National Wildlife Refuge.

Public Law 96-487 allows for mineral leasing within the WMNRA, but it permanently closed the area to the filing of mining claims. However, properly located and maintained claims filed prior to passage of the law are still in good standing. There are 1,190 such claims in the WMNRA. Only a few are actually being mined.

The only mineral currently being mined is gold. All production is taking place in the Nome Creek area. During the 1982 mining season, three notices of intent were filed. (Notices of intent are required for mining or prospecting operations which result in less than five acres of surface disturbance.) The number of claimants who actually operate mines varies from year to year, depending on economic conditions.

All gold mining in the WMNRA is placer mining. Mining usually takes place only from May to November, when water is available. A typical placer mine employs three to ten people. Bulldozers are used to strip overburden and push gravel into sluice boxes. Sluice boxes of ten to 75 feet in length are used to separate the gold from the gravel. Water for the sluice is usually supplied by a diesel pump. Tailings are removed by bulldozers, front-end loaders, or draglines.

Small-scale operations may employ only a two- to eight-inch suction dredge, which draws up water and gravel simultaneously and runs it through a small sluice box.

RECREATION

A Recreation Opportunity Spectrum (ROS) analysis was completed for the WMNRA. ROS classifications are a means of describing the recreation opportunities available in a particular area. Table 3-1 provides a description of the four ROS classifications used to describe the WMNRA. Map 3-5 shows how the WMNRA was classified.

Nearly all of the WMNRA can currently be classified as primitive under the ROS system. This reflects the remote and relatively unspoiled character of most of the area.

Recreational developments within the WMNRA consist of two public use cabins and two trails (White Mountain Summer Trail and White Mountain Winter Trail) which provide access to Beaver Creek. Both trails begin on the Elliott Highway. The summer trail is a hiking trail which generally follows the high ground. The winter trail traverses low, wet areas, and provides winter access via snowmachine or skis.

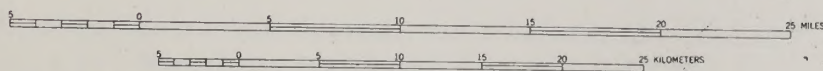
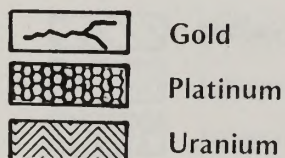
There are no campgrounds within the WMNRA, but the nearby campground at Cripple Creek contributes to recreational use of the area. Cripple Creek Campground is treated as an existing recreational facility in Chapter 2.

Recreation use in the WMNRA is generally light. Lack of access and facilities limits use in most areas. Beaver Creek National Wild River is the principal recreation



Map 3-3



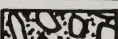
Mineral Occurrences

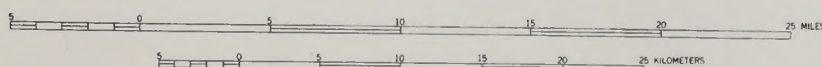




Map 3—4

Mineral Terranes

-  Sedimentary (Copper, Lead, Zinc)
-  Igneous-Granite (Tin, Tungsten, Molybdenum)
-  Igneous-Gabbro (Copper, Nickel)





Map 3—5

Existing Recreation Opportunity Spectrum Class

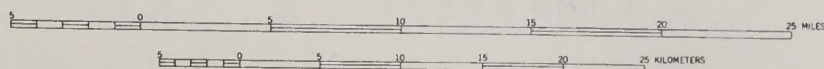
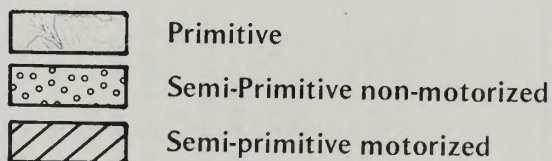


Table 3-1

Summary Description of the ROS Classification System

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural
<p>Area is characterized by essentially unmodified natural environment of fairly large size. Interaction between users is very low, and evidence of other users is minimal. Evidence of motorized use is extremely rare.</p>	<p>Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. There is little or no evidence of motorized use.</p>	<p>Area is characterized by a predominantly natural-appearing environment with moderate evidence of the sights and sounds of man. Such evidence usually harmonizes with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Roads and motorized use are present.</p>	<p>Area is characterized by a predominantly natural-appearing environment with moderate evidence of the sights and sounds of man. Such evidence usually harmonizes with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Roads and motorized use are present.</p>

attractor. Access to Beaver Creek is difficult. Most visitors drive the U.S. Creek Road from the Steese Highway to Nome Creek. They must then travel down Nome Creek to Beaver Creek, which requires them to line their boats because of low water. There is no surface access to any take-out point on the wild river. Floaters either travel all the way to the Yukon River and down to the Yukon River Bridge or arrange to be picked up by aircraft.

Hiking is concentrated on the White Mountain Summer Trail, but other existing and unmaintained trails are also used. Off-road vehicle use occurs on many existing trails, often in connection with sport hunting, another popular recreational activity. Most recreation activity takes place during the summer or fall. However, the White Mountain Winter Trail and the public use cabins are utilized in the winter months. The Wickersham Dome area, near the Elliott Highway, is also a popular spot for snowmachining or skiing. Seasonal closure of the Steese Highway makes the eastern part of the WMNRA more difficult to reach in winter, and there is probably very little use in that area.

VISUAL RESOURCES

The White Mountains National Recreation Area falls within the Northern Plateau physiographic province. The area consists of primarily undeveloped land.

The landforms of the WMNRA are defined by two distinctive elements: The White Mountains and Beaver Creek. The characteristic landforms are rounded, even-topped ridges with gentle side slopes surmounted by compact, rugged mountains.

Beaver Creek is the main drainage of the WMNRA and flows north into the Yukon River. The major tributaries (Bear, Champion, Nome, Ophir, Trail, Wickersham, and Victoria Creeks) flow through deep, narrow valleys.

Lands of high elevation compose a major portion of the WMNRA; because of this, tundra is the major vegetative type. Birch, aspen, and white spruce dominate well-drained river bottom sites and exposed slopes. Low growing spruce are found on the lower and more poorly drained lands and on north-facing slopes. Scrub vegetation provides the transition between tundra and forest, and is found throughout the area.

For a brief period in the late summer the tundra blooms, creating a colorful view, especially striking when viewed against rugged mountains of white limestone. Birch and aspen stands turn to gold and orange in the fall, a vivid visual contrast to the dominant green swath of spruce trees.

A remarkable diversity of landscape types exist within the WMNRA, offering a variety of scenic vistas. Sights range from the sheer cliffs of the White Mountains rising from the edge of Beaver Creek to the monotony of the Yukon Flats as viewed from Mounts Schwatka and Victoria. The overall landscape of the White Mountains area has been identified as a scenic complex representing a diversity of striking and distinctive visual characteristics in a contiguous area (Gordon and Shaine, 1978).

Little of the WMNRA is visible from either the Steese or Elliott Highways. However, some viewpoints can be reached by hiking trails or off-road vehicle trails. Float-boating on Beaver Creek provides the best opportunity for viewing the outstanding scenery of the White Mountains.

CULTURAL RESOURCES

Known cultural resources within the WMNRA are associated with the gold rush era of the early twentieth century. Cabins and remains of cabins are found along Beaver Creek. Very little is known about these sites. Trails with historical value which cross the WMNRA include the Chatanika-Yukon trail, Beaver Creek summer trail, Colorado Creek trail, and Nome Creek trail. Portions of these trails are still used by miners, hunters, and recreationists.

No prehistoric sites have been found within the WMNRA, though they undoubtedly exist. There is insufficient data to predict the likely density of such sites.

There are no National Register sites within the WMNRA.

LAND STATUS

Most of the approximately 1,000,000 acres within the WMNRA are public lands owned by the Federal government. Two small parcels, one of 63.36 acres and one of 17.99 acres, are privately owned. Also, there is an eighty-acre parcel which is covered by a Native allotment application. Several hundred acres along the southern boundary of the WMNRA lands have been tentatively approved for conveyance to the State of Alaska. Public Law 96-487 withdrew all lands within the WMNRA from further State selections.

Public Law 96-487 also designated Beaver Creek as a National Wild River. Proposed boundaries of the wild river corridor are shown on Map 3-6.

ACCESS

Two public highways, the Steese Highway and the Elliott Highway, provide access to the vicinity of the WMNRA. The Steese Highway is largely unpaved and is not kept open during the winter months. The Elliott Highway is paved as far as Wickersham Dome and is open all year.

There are no paved roads within the WMNRA. U.S. Creek Road, a dirt road which was upgraded during 1983, provides access for two-wheel-drive vehicles as far as Nome Creek. There are many unimproved trails which lead off of the highways and into the unit, some of which are passable by wheeled vehicles. Others are passable only by tracked vehicles or on foot. Most trails were constructed by miners, and some are still used to provide access to claims. Trails are also used by recreationists. Use of most trails is seasonal, with the heaviest use occurring during the summer. Some trails are claimed by the State of Alaska as public rights-of-way under Revised Statute 2477.

Two private airstrips exist along Beaver Creek. They can accommodate only light aircraft. Light aircraft also use gravel bars on Beaver Creek for landing areas, and float planes can land on the lower stretches of the stream. There is also a rough landing strip on Lime Peak.

SOCIAL AND ECONOMIC CONDITIONS

General Description

One family resides year-around within the planning unit, near the mouth of Victoria Creek. A few placer miners live on mining claims within the WMNRA during the mining season (May through September).

Based on public response to the planning effort, the people outside of the WMNRA who are most likely to be affected by the management of the area are the residents of Fairbanks, Central/Circle Hot Springs, Circle, and Birch Creek. Populations of these communities are shown in Table 3-2.

Fairbanks, by far the largest of these communities, is also the closest to the WMNRA. It is the trade and transportation center for the interior of Alaska. Fairbanks North Star Borough contains two incorporated cities (Fairbanks and North Pole) and numerous unincorporated suburban and rural communities. Fairbanks is linked to coastal Alaska by paved highways, a railroad, and scheduled air transportation. The area experienced rapid economic and population growth during the construction of the Trans-Alaska Pipeline in the 1970s. Immediately after construction, population decreased somewhat, but the area is now growing again.

Much of the Fairbanks economy is still directly or indirectly tied to the oil industry. Other sources of jobs include government (including the military), tourism, transportation, and mining.

The community of Central is located approximately 128 miles northeast of Fairbanks on the Steese Highway. Circle Hot Springs, located about eight miles away on a spur road, can be considered part of the Central community. There is no incorporated government in the area.

The Steese Highway is largely unpaved and is not maintained through the winter. During the winter months, Central is accessible only by light aircraft or overland travel via tracked vehicle. Placer mining and tourism are the two principal industries of the area. Both take place mainly during the summer months, when the population of the area increases far beyond the number of permanent residents, perhaps to as high as 300.

At the end of the Steese Highway, about 30 miles beyond Central, lies Circle. Like Central, Circle has no highway access during the winter, but, has an airstrip. Most of the population is Athabascan. The economy is sustained by government, the village corporation (set up under the Alaska Native Claims Settlement Act), and a few small businesses, such as a store and an air charter service. Hunting, fishing, and trapping also contribute to the well-being of the residents.

Birch Creek is a small Athabascan community located in the Yukon Flats. Birch Creek has no road access whatsoever. It can be reached only by air, or by boat via the Yukon River and Birch Creek.

Neither Circle nor Birch Creek are incorporated.

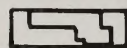
Major Economic Factors

There is very little economic activity of any sort within the WMNRA itself or in the immediate surrounding area.

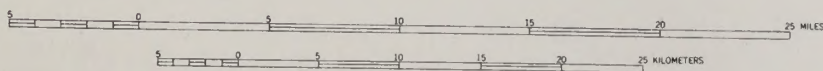


Map 3—6

Land Status



Beaver Creek Wild River Corridor (proposed)



There are numerous mining claims within the WMNRA, but most are not currently being mined. In recent years, there have been three or four active gold placer mining operations during the summer months.

However, placer gold mining is of considerable importance in the region as a whole, with most activity concentrated in the vicinity of Central. There are between 80 and 90 mining operations in the Central area. All of the miners are independent, relatively small operators. This makes data collection extremely difficult. Gold is commonly sold to Fairbanks buyers for cash, or it may be traded directly for goods and services. However, it is clear that gold production is of significant value. In addition to providing seasonal employment for several hundred people, the placer mining industry contributes to the economies of Circle, Central, and Fairbanks through the purchase of heavy equipment, fuel, supplies, and technical services. Total expenditures by the placer mining industry in Fairbanks in 1982 were estimated to be \$31,141,000 (Alaska Department of Commerce and Economic Development, 1983).

Another economic activity which involves the WMNRA is recreation. Recreation use of the WMNRA itself is currently low, probably because of limited access. It is important to the region as a whole, however.

It has been estimated that the recreation industry provides over 1000 jobs in Fairbanks and results in annual expenditures of approximately \$27,000,000 (Alaska Department of Natural Resources, 1983).

There is some overlap between the mining and recreation industries. Although some recreationists object to the noise and visual impacts of placer mining, others visit the region specifically because of the opportunity to see gold mines or to engage in recreational mining (gold-panning). Also, restaurants, service stations, and other such businesses provide services to both miners and recreationists.

Subsistence

Subsistence use of resources by rural residents is a matter of socio-cultural importance as well as economic importance. Many residents of Central, Circle, and Birch Creek engage in hunting, fishing, trapping, and berry-picking. They regard these activities as important traditions and, also, as a means of putting food on the table.

The single family which resides within the WMNRA depends on subsistence resources to a very great extent. Most of their activities are in the vicinity of their home, near the mouth of Victoria Creek. Other than the activities of this family, there appears to be very little subsistence use within the boundaries of the WMNRA. However, the WMNRA undoubtedly provides habitat for many animals which are harvested by subsistence users outside the unit. The most important example is the Fortymile caribou herd, which spends part of each year within the unit and which is an important subsistence resource to many interior Alaskans. Also, Beaver Creek, which passes through the unit, provides a subsistence fishery for some residents of the Yukon Flats.

Social Attitudes and Lifestyles

Independence and self-reliance are values which are held in high esteem by most Alaskans. This is especially evident in the rural communities, where the lack of local government is often due to explicit opposition to government rather than lack of population or a tax base.

Almost all interior Alaskans consider outdoor recreation extremely important, but there is disagreement between those who want to maintain primitive recreation opportunities and those who would like development of facilities and improved access.

Hunting and fishing are also regarded as extremely important, both by sportsmen and subsistence users.

Table 3-2

1980 Population	
Fairbanks North Star Borough	58,983
Central*	36
Circle	81
Birch Creek	32

*Includes the residents of Circle Hot Springs

Source: Bureau of the Census

4

Environmental Consequences

ALTERNATIVE A

Vegetation

The major impact on vegetation is likely to be caused by the change from full suppression of all fires to fire management based on a variety of options. In the areas where some fires are permitted to burn, the gradual shift to climax communities which is now occurring will be slowed or prevented. The environmental impacts of fire management are described in greater detail in the "Alaska Inter-agency Fire Management Plan: Tanana/Minchumina Planning Area (Miller, 1982).

Continuation of existing placer mining and the construction of roads, trails, and recreation facilities will all cause some localized destruction of vegetation. Under this alternative, such damage is not expected to be significant, and could be mitigated by project design and revegetation.

This alternative will not lead to any significant unavoidable adverse impacts or irreversible commitments of resources in regard to vegetation.

Long-term productivity of vegetation (especially as an element of wildlife habitat) will be improved by fire management, though there may be a small short-term loss of usable timber.

Soils

Localized soil disturbance will occur at a few sites, principally placer mines. Overall impacts on soils are not expected to be significant under this alternative.

Water Resources

There will be very little impact to water resources under this alternative.

The water quality problem caused by placer mining on Nome Creek will probably continue at about the same level. The problem could become more severe if mining expands onto existing but currently unmined claims on Nome, Bear, and Champion Creeks. The degradation is due to soil particles or naturally-occurring toxic materials which remain in the water used in sluice boxes. Water recycling, settling ponds, and other methods can substantially mitigate this problem by removing most of the settleable solids. However, there is currently no economically feasible method of removing all particles from the water. Colloidal material will remain in the water, making the stream turbid. This is an unavoidable adverse effect of placer mining. It is not an irreversible commitment of resources, since the streams will clear up when placer mining ceases. Long-term productivity is not impaired.

There are no known plans to mine the existing rare earth lode claims near Mount Prindle. However, if such development occurred, it could affect water resources,

depending on the type of mining. Underground mining would have little effect on water resources. Open-pit mining could damage upland watersheds through excavation. Either underground or open-pit mining could cause water quality degradation through erosion and leaching from tailings. All effects could be mitigated by surface management regulations.

Road or trail construction, fire suppression activities, or any other surface-disturbing activities can cause erosion which could lead to deterioration of the watershed. This is not expected to be a significant problem under this alternative.

Air Quality

There will be no significant effects on air quality. Changes in fire management may result in more smoke during some fire seasons.

Wildlife

This alternative is not expected to have significant effects on wildlife. Placer mining and other surface-disturbing activities will cause some localized destruction of habitat. Habitat for moose and other species may be improved through fire management. There are no significant unavoidable adverse effects or irreversible commitments of resources.

Fish

The major impact on fisheries will be caused by placer mining. Impacts are likely to be confined to Nome Creek, Bear Creek, Champion Creek, and the upper portion of Beaver Creek. As described earlier, placer mining leads to water quality degradation. Siltation, turbidity, and toxicity can all negatively affect the aquatic environment. These effects are described by Madison (1981). Some of these problems can be mitigated by improved mining techniques. Increased water turbidity is an unavoidable adverse effect. Increased toxicity may be an unavoidable adverse impact in certain locations. Also, mining in stream beds causes physical destruction of habitat. These impacts do not represent an irreversible commitment of resources, since fish are a renewable resource and streams should recover from the effects of placer mining when mining ceases. Long-term productivity may be impaired in certain areas depending on intensity of mining and mitigating measures.

Any other actions which affect water quality would also affect fish. Removal of gravel from stream beds can damage habitat. These problems can be mitigated and are not expected to be significant under this alternative.

Removal of water during the winter from fish over-wintering areas has severe negative impacts on fish populations. This can be prevented by not allowing winter use of water in such areas.

Minerals

This alternative limits mineral development to valid existing rights. It is not yet clear how many claims can be legally developed, but it cannot be more than the 1,190 existing claims. Many claims will prove unprofitable and will never be developed in any case. There could be a short-term increase in mineral production as some undeveloped claims are brought into production, but production will

inevitably drop in the long run. This is an unavoidable adverse impact. Valid claims will be worked out and miners will be unable to lease new ground. There will be no production of leasable minerals, since there are no existing leases. There is unlikely to be any further mineral exploration, since miners will be unwilling to explore ground which they cannot lease.

Consumption of minerals can be regarded as an irreversible commitment of resources.

Recreation

Recreation opportunities will remain largely unchanged under this alternative.

Placer mining will have some negative impact on recreation by causing impaired water quality, especially on the headwaters of Beaver Creek. Noise and visual intrusions caused by mining will also be negative impacts. The degree of impact will depend upon the level of development. These impacts can be mitigated through surface management regulations, but there will be some unavoidable adverse impacts, such as water turbidity.

Development of new roads and trails to existing claims will have both positive and negative impacts on recreation opportunities. Access will be improved which will allow increased use, but the primitive character of some areas may be impaired. A moderate increase in recreation use is probable on Beaver Creek, the Nome Creek area (due to recently improved access), and in the vicinity of trails and recreation sites.

Mineral development and construction of access in primitive areas is likely to be an irreversible commitment of resources, since areas with access seldom revert to a primitive character.

Visual Resources

Mining is the major activity which has affected and will continue to affect visual resources. Dirty water and other visual intrusions caused by mining can be partially mitigated through visual analysis and design, reclamation, and other measures, but there will be some unavoidable adverse impacts. These impacts will be limited to existing claims under this alternative. Some impacts will be short-term impacts which can be alleviated by reclamation. Others will be long-term, and may even become irreversible commitments of resources.

Any other surface-disturbing activities, including use of off-road vehicles, may also reduce visual resource quality. These impacts are not likely to be as extensive as the impacts of mining.

Cultural Resources

Without further inventory to determine the location and significance of cultural resources, any surface-disturbing activity has the potential to damage such resources. Negative impacts can be mitigated by case-by-case site examinations. Any destruction of cultural resources is an irreversible commitment of resources.

Land Status

This alternative will cause no changes in land status within the WMNRA.

Access

Access will be improved slightly as new roads and trails are constructed to reach existing undeveloped mining claims.

Social and Economic Conditions

This alternative has no short-term social or economic effects. Long-term effects are more difficult to assess. Leaving the area closed to all new mineral development could eventually have a negative effect on the mining-related economy of Fairbanks and the Central/Circle Hot Springs area. However, the WMNRA does not currently contribute as much to that economy as do other nearby areas, such as the Steese National Conservation Area and adjacent State lands.

Recreational use of the WMNRA could be beneficial to the local economy, but recreational use is not expected to increase significantly under this alternative.

Subsistence opportunities would be largely unchanged under this alternative.

Support Needs

Implementation of this alternative will not require a significant increase in BLM personnel or funding.

ALTERNATIVE B

Vegetation

Impacts will be the same as those described under Alternative A, except that the use of prescribed fire will allow a greater degree of control over fire-caused changes in plant communities. Also, inventory work and the designation of Research Natural Areas will provide a higher degree of protection for rare and sensitive plants.

Soils

Because of limitations on off-road vehicles, soil disturbance will be even less than under Alternative A. Overall impacts on soils are not expected to be significant.

Water Resources

The impacts of placer mining will be similar to those described under Alternative A. The stricter enforcement of surface mining regulations under this alternative may result in greater mitigation of the adverse effects of placer mining, but water turbidity will still be an unavoidable adverse effect. Also, allowing leasing of existing unperfected claims may somewhat expand the amount of ground available for mining, making the effects of mining more widespread. If the rare earth lode is mined, the effects will be the same as those described under Alternative A.

There will be no irreversible commitments of resources.

Other activities are expected to have lesser impacts on water resources under this alternative. Limitation of off-road vehicles will have a slight positive effect. Designation of transportation corridors and proper design of roads and trails will concentrate vehicle use in these areas and, therefore, will also be positive. The negative impacts of road and trail construction will be more than offset by the positive impact of reducing dispersed use on poorly-designed trails.

Air Quality

Same as Alternative A.

Wildlife

This alternative will have no significant adverse effects on wildlife. Habitat damage caused by mining will occur, but can be mitigated through implementation of surface management regulations.

The habitat improvement and other intensive management measures called for under this alternative will have positive effects. Game populations will probably increase. Long-term productivity of habitat will be improved.

There are no unavoidable adverse effects or irreversible commitments of resources.

Fish

Impacts of placer mining will be very similar to those described under Alternative A. Intensive management of fisheries and better implementation of surface management regulations should result in greater mitigation of adverse impacts, but the effects of water turbidity will remain an unavoidable adverse impact.

There are no other significant adverse impacts or any irreversible commitments of resources. Intensive management may enhance long-term productivity.

Minerals

This alternative guarantees that all properly located and maintained claims can be retained and developed, since claimants who do not meet the proof-of-discovery requirement of PL 96-487 will be allowed to convert their claims to leases. However, no new lands will be opened to leasing, so the total number of claims which can be legally developed still cannot exceed the number of existing claims (1,190). All other conditions are also the same as under Alternative A. Therefore, the effects of this alternative are the same as the effects of Alternative A.

Recreation

Same as Alternative A.

Visual Resources

Impacts will be similar to those described in Alternative A, but will be significantly reduced in magnitude. Restrictions on vehicle use and better implementation of surface management regulations will provide better protection for visual resources.

Cultural Resources

Impacts are the same as those described under Alternative A, except that the likelihood of negative impacts will be reduced by the Class II inventory.

Land Status

Land status within the boundaries of the WMNRA will not change significantly. If the proposed exchanges can be accomplished, Federal ownership of adjacent lands will increase by about 19,800 acres.

Access

Access will be improved slightly as new roads and trails are constructed. Improved design and more careful supervision of construction will result in better quality roads and trails.

Social and Economic Conditions

Social and economic impacts will be the same as in Alternative A with the exception of impacts on subsistence. Some subsistence resources will be increased by habitat improvement and intensive management.

Support Needs

Implementation of this alternative will require increased commitments of resources in the recreation, minerals, and wildlife programs. Summer temporaries will be needed in recreation to provide visitor services, and funds will be needed for construction of facilities. The minerals program will need increased funding for enforcement of surface management regulations, and wildlife will require funds for planning and execution of habitat improvement projects and necessary inventories.

ALTERNATIVE C

Vegetation

Impacts of fire management will be the same as those described in Alternative A, except that the use of prescribed fire will allow a greater degree of management control over those impacts.

Opening large areas to location of new mining claims could have an impact on vegetation, if valuable mineral deposits are discovered and exploited. Mining requires clearing of vegetation, but such clearings will be relatively small in relation to the entire area, even with the maximum amount of mineral development

considered likely. Adverse impacts can be mitigated by surface management regulations and mineral leasing regulations. If proper reclamation is done, there will be no irreversible commitments of resources.

Inventory work will make it possible to identify and protect rare and sensitive plants, but because of looser restrictions on off-road vehicles, there is a slightly greater risk to such plants under this alternative than under Alternative A.

Soils

Fewer restrictions on off-road vehicles and the possibility of increased mining mean that the risk of soil disturbance and erosion is higher under this alternative than under Alternatives A or B. Negative impacts can be mitigated through surface management regulations, mineral leasing regulations, construction of properly designed roads and trails which will reduce dispersed use of vehicles, and reclamation of disturbed sites.

No unavoidable adverse effects or irreversible commitments of resources are expected.

Water Resources

Opening lands to new mineral leasing could lead to water resource degradation, if mineral development takes place. The type of impacts would be the same as those described under Alternative A. The degree of impact is impossible to quantify, since it would depend upon the amount of mining which actually takes place. The type of mining activity most likely to increase in the near future is gold placer mining. Impacts of placer mining can be mitigated by thorough enforcement of surface management regulations and mineral leasing regulations, but water turbidity will be an unavoidable adverse effect. Underground or open-pit mining might occur for rare earths if other valuable deposits susceptible to such methods are discovered. Impacts of underground and open-pit mining are described under Alternative A. Oil and gas leasing would probably have no significant impacts on water resources.

The negative impact of off-road vehicles on water quality may be slightly higher than under Alternative B, but it is still unlikely to be a serious problem. Designation of transportation corridors and construction of properly designed roads and trails will mitigate the impacts.

No other activities are expected to have significant effects. There will be no irreversible commitments of resources.

Air Quality

Same as Alternative A.

Wildlife

There is a potential of significant adverse impacts to wildlife and wildlife habitat under this alternative. If opening lands to new mineral leasing does result in a substantial increase in mining activity, such activity will cause destruction of habitat and disturbance of wildlife by the presence of men and machinery. These impacts

can be mitigated through implementation of surface management regulations and mineral leasing regulations. Within the Special Management Areas, where especially important wildlife values have been identified, special stipulations, such as seasonal use restrictions, will be necessary to limit the adverse effects of mineral development. In spite of these measures, there may be unavoidable adverse effects in areas of concentrated mineral development. These effects could be offset by habitat improvement and other intensive management techniques in other areas. The magnitude of the impacts of mining on wildlife will depend upon the extent of mineral development. The more mineral development that occurs, the greater the effort necessary to mitigate impacts through management.

Peregrine falcons will not be significantly affected, since known use areas are not included in the areas to be opened to leasing.

There are no irreversible commitments of resources.

Fish

The impacts are the same as those described under Alternative B, except that if placer mining begins on creeks which are not currently being mined, the adverse effects of placer mining will become more widespread.

Minerals

Although this alternative opens a considerable amount of new ground to mineral leasing, it is difficult to estimate what effect this will have on mineral production. Much of the area that will be opened has little known mineral potential. However, some areas with placer gold potential will be opened, and further exploration may result in the discovery of other workable mineral deposits. This alternative at least increases the probability that the life of the gold placer mining industry will be extended or that a new mineral industry will develop. The greatest potential is for hardrock mineral production; the potential for oil and gas or other leasable minerals is generally low in the areas being opened.

The imposition of special stipulations to protect wildlife within the Special Management Areas will increase the cost of mineral development in those areas. It is possible that these costs may be enough to prevent or slow development of deposits of marginal value.

Opening lands to leasing will encourage prospectors to explore those areas. Considerable exploration for hardrock minerals can be expected. There will be a less intensive search for oil and gas and other leasable minerals.

If this alternative increases mineral production, it will therefore increase the irreversible commitment of those mineral resources.

Recreation

Impacts to recreation under this alternative will result primarily from increased access, recreation facility development, and mineral development. Impacts to recreation, both positive and negative, will result from increased access. Access may be improved for mineral exploration and development, and these roads and trails will be available for recreational use. Roads would provide access for activities such

as hunting and hiking in areas which now receive limited use due to their remote location. Recreation facility development will also increase recreation use. Increased use may lead to negative impacts, such as trash, soil compaction, human-bear conflicts, or user conflicts, especially in the vicinity of developed sites and access routes. These problems can be mitigated by visitor services.

Expanded mineral development under this alternative, especially in the headwaters of Beaver Creek, could result in adverse impacts to recreation. The adverse impacts of mining on recreation are described in Alternative A, but because more land is open to mineral development under this alternative, the potential for adverse effects is higher. Some impacts can be mitigated through implementation of existing surface management regulations, but there will be some unavoidable adverse impacts to recreation.

The total effect of decreasing primitive recreation opportunities through increased access, recreation facility development, and mineral development may be of significant impact to the existing situation. Areas identified for continued primitive management may also be affected by development activities located outside of the primitive recreation management areas. However, during the life of this plan, much of the area identified for semi-primitive management under this alternative will actually remain primitive in character.

Visual Resources

The impacts are the same as those described under Alternative A. However, the extent and severity of the impacts will increase as recreational use and mineral development increases.

Cultural Resources

Negative impacts are the same as those described under Alternative A. The Class II inventory will reduce the likelihood of those impacts. Also, recreational use of historic structures would enhance visitor understanding of cultural values.

Land Status

Same as Alternative B.

Access

Summer access will be improved significantly by roads and trails constructed for recreational use or mineral development. Winter access is likely to remain difficult, though roads can be used as snowmachine trails in the winter.

Social and Economic Conditions

This alternative will improve the long-term outlook for the minerals industry in the area, which will have a positive impact on the local economy. Increased recreational use will also contribute to the economy.

However, an increase in the number of visitors may lead to conflicts between users, especially between recreationists and miners. Some miners will object to recreational use of roads and trails which they have constructed.

Improved access and development of recreation facilities will be beneficial to car campers, hunters, and other recreationists who use vehicles or facilities. Opportunities will be reduced for those who favor a primitive recreation setting.

Opportunities for subsistence use of resources outside of the WMNRA will be unaffected by this alternative. Within the WMNRA, improved access will increase opportunities for subsistence use, but may also increase competition from sport hunters. Subsistence use will not be significantly restricted by any actions in this alternative. Some subsistence resources will benefit from habitat improvement and intensive management.

Support Needs

This alternative will require at least the same level of support as Alternative B. In addition, more funds will be needed for construction of recreation facilities, since those facilities are more extensive under this alternative. Also, if mineral development increases, more funds will be needed for enforcement of mineral leasing regulations and maintenance of wildlife values in the Special Management Areas.

ALTERNATIVE D

Vegetation

Impacts will be similar to those described under Alternative C. The likelihood of negative impacts from mining is increased, since a larger area will be opened to mining.

Soils

Impacts will be similar to those described under Alternative C. Increased recreational use and mineral development will increase the possibility of adverse effects.

Water Resources

Because most of the area will be open to mineral development, this alternative presents the highest potential for adverse effects on water quality. The effects of mining and mitigating measures are described under Alternative A.

Increased recreational use could create localized erosion and water quality problems. These problems can be mitigated by proper design and location of facilities.

Other impacts are the same as those described under Alternative C.

Air Quality

Same as Alternative A.

Wildlife

This alternative has the highest potential for adverse effects on wildlife. The impacts of development are described under Alternative C. Because more lands are open to development under this alternative, the risks of negative impacts are higher, especially to caribou and Dall sheep habitat. Peregrine falcons will not be significantly affected.

Adverse impacts can be mitigated or offset as described under Alternative C, but this will require an even greater management effort.

Fish

Same as Alternative C.

Minerals

This alternative provides the best opportunity for continuation and growth of mineral production in the WMNRA. Most of the area will be open to mineral development. The likelihood of hardrock mineral production is substantially greater than under Alternative A, B, or C. The potential for production of oil and gas or other leasable minerals remains low.

The impacts of Special Management Areas for wildlife are the same as those described under Alternative C.

Mineral exploration can be expected to increase significantly.

Any increase in mineral production will be an increase in the irreversible commitment of those resources.

Recreation

The most significant impacts will come from increased access and mineral development.

These impacts are described under Alternative C. Impacts, both positive and negative, will be of greater magnitude under this alternative. Overall recreation use will be higher under this alternative than under Alternatives A, B, or C.

Visual Resources

Impacts are the same as those described under Alternative A. The extent and severity of impacts will increase as recreational use and mineral development increases.

Cultural Resources

Same as Alternative C.

Land Status

Same as Alternative B.

Access

This alternative will result in more access than Alternatives A, B, or C.

Social and Economic Conditions

This alternative provides the best opportunity for maintaining or improving the local economy through increased mineral development and recreational activity. The impacts of improved access, development of recreational facilities, and an increase in the number of visitors are the same as those described under Alternative C.

The impacts on subsistence use and subsistence resources are the same as those described under Alternative C. Subsistence use will not be significantly restricted by any actions in this alternative.

Support Needs

This alternative will require a higher level of support than Alternatives A, B, or C. This alternative projects the highest level of recreational development, and therefore will require the most construction and the highest level of visitor services. Also, this alternative has a high potential for increased mineral development, which will increase the work load in enforcement of surface management regulations, maintenance of wildlife values in the Special Management Areas, and protection of any other resources which may be put at risk.

ALTERNATIVE E

Alternative E, the Preferred Alternative, is a modification of Alternative C. Recreational development will be at the same level as Alternative C. However, somewhat more area will be opened to motorized recreation and mineral leasing. This alternative will provide a variety of recreational opportunities while allowing utilization of other valuable resources.

For all resources except wildlife habitat, environmental consequences are similar to those described under Alternative C. The amount of land opened to mineral development under this alternative is somewhat larger than the area opened under Alternative C; therefore, the risk of all impacts associated with mineral development is higher. However, the areas which are most sensitive to such impacts (Beaver Creek and the White Mountains) will not be opened to development.

Impacts on wildlife habitat are expected to be closer to the impacts of Alternative D.

Subsistence use will not be significantly restricted by any actions in this alternative.

Support needs will be the same as for Alternative C.

5

Consultation, Coordination, Consistency and Public Participation

At the beginning of the planning process, notices inviting public participation were published in the "Federal Register" and four Alaska newspapers. A mailing list of interested parties was compiled and continually updated as planning proceeded. The following is a partial listing of persons and groups who were contacted during the planning process.

State of Alaska

At the request of the State, formal coordination with all State agencies was handled through a single office, the State Conservation System Unit Coordinator.

Federal Agencies

- Bureau of Indian Affairs
- Bureau of Mines
- Environmental Protection Agency
- Fish and Wildlife Service
- Forest Service
- Park Service

Native Organizations and Corporations

- Alaska Federation of Natives
- Tanana Chiefs Conference
- Doyon Ltd.
- Tihteet Aii Inc.
- Danzhit Hanlaili Corp.
- Beaver Kwit'chin Corp.
- Dinyea Corp.
- Gwitchyaa Zhee Corp.

Environmental Organizations

- Alaska Center for the Environment
- Interior River Users Group
- Northern Alaska Environmental Center
- National Wildlife Federation
- Sierra Club

Trade Associations

Alaska Miners Association
Alaska Oil and Gas Association
Circle Mining District

Other

Interested individuals and groups including; elected officials, all holders of mining claims within the WMNRA, media, University of Alaska, and general public.

Copies of this environmental impact statement have been sent to all of the organizations and persons listed above.

Prior to completion of this document, comments were solicited at three points in the process; identification of issues, development of criteria, and estimation of effects of alternatives. Comments were solicited by mail. In addition, public meetings were held during the estimation of effects of alternatives in Fairbanks, Central, and Birch Creek. Briefings were given on request to a number of agencies and organizations.

The Fairbanks District Advisory Council, a BLM citizens' advisory group, was heavily involved in the planning process. The Council held three public meetings on the subject, two in Fairbanks and one in Central.

To insure consistency with plans for adjacent lands, adjacent land managers (State of Alaska, US Fish and Wildlife Service, and National Park Service) were included in the contact group from the beginning of the process.

Adjacent Federal lands managed by BLM include the Steese National Conservation Area (SNCA). A land use plan is also being written for this area. To insure coordination between plans for the SNCA and the WMNRA, both plans are being prepared simultaneously by the same planning team. The Draft Resource Management Plan/Environmental Impact Statement for the SNCA has been published separately and is available from BLM.

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A

Fire Management Options

CRITICAL PROTECTION SITES (AREAS)

Policy

This designation is for those areas where fire presents a real and immediate threat to human safety and designated physical developments. Fires burning in these areas (sites) will be immediately and aggressively suppressed.

Objectives

- Protect human life and inhabited property.
- Place highest priority on the allocation of suppression forces to sites (areas) in this option.
- Limit damage from fire to the minimum achievable.

FULL PROTECTION AREAS

Policy

The fires burning in this area will be controlled through immediate and aggressive action.

Objectives

- Regardless of fire weather, or behavior, control all fires at the smallest acreage possible.
- Minimize the disruption by fire on designated, planned, or ongoing human activities in the area.

MODIFIED ACTION AREAS

Policy

Contain all fires using aggressive initial attack unless otherwise directed by the land manager/owner upon completion of a modified initial attack analysis.

Manage fires to consider resource management objectives in a cost-effective manner.

Objectives

- Reduce suppression costs on escaped fires through minimum force commitments and indirect suppression tactics.
- Provide opportunities for fire to help achieve land management objectives.

LIMITED ACTION AREAS

Policy

Contain fires only to the extent required to prevent undesirable escape from this area.

Objectives

- Reduce overall suppression costs.
- Allow fire to burn unimpeded to the fullest extent possible.
- Prevent fire activity in this area from violating fire management policies and objectives in adjoining areas.

B

Research Natural Areas

Research Natural Areas (RNAs) are established under 43 CFR 8223. RNAs are established and maintained for scientific research and public education. They are chosen on the basis of natural characteristics which make them desirable for those purposes.

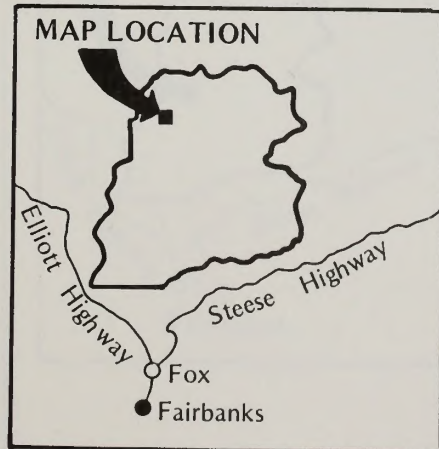
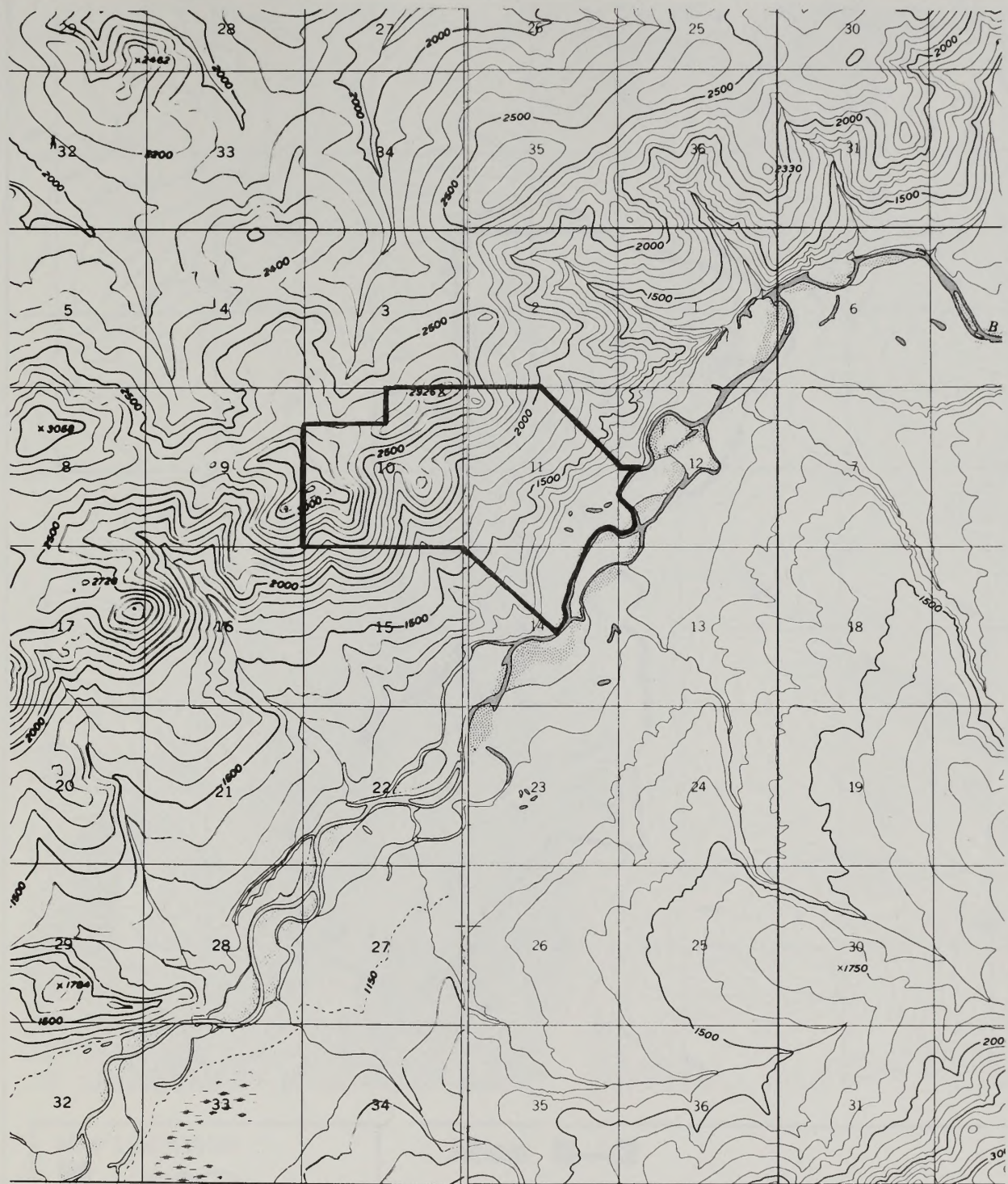
A survey of the Steese National Conservation Area and the White Mountains National Recreation Area was conducted in 1982, to determine if either unit contained areas suitable for RNA designation. Three such areas were found within the WMNRA. Locations and proposed boundaries of these areas are shown on Maps B-1, B-2, and B-3.

The proposed Mount Prindle RNA, which straddles the border between the WMNRA and the Steese National Conservation Area, was selected for special physiographic, wildlife, and botanical values.

The proposed Limestone Jags RNA was selected for geologic features (including limestone caves and a natural arch) as well as certain wildlife and botanical values. The proposed Serpentine Slide RNA contains a major earthslide, an unusual bedrock type, and other significant values.

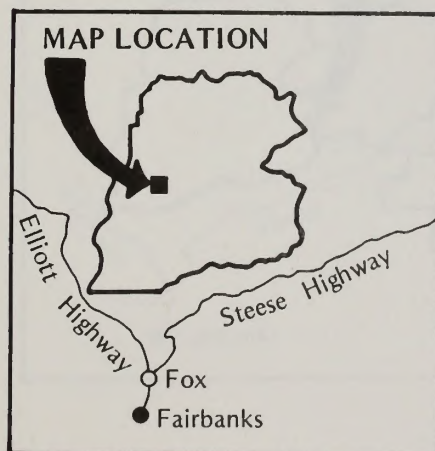
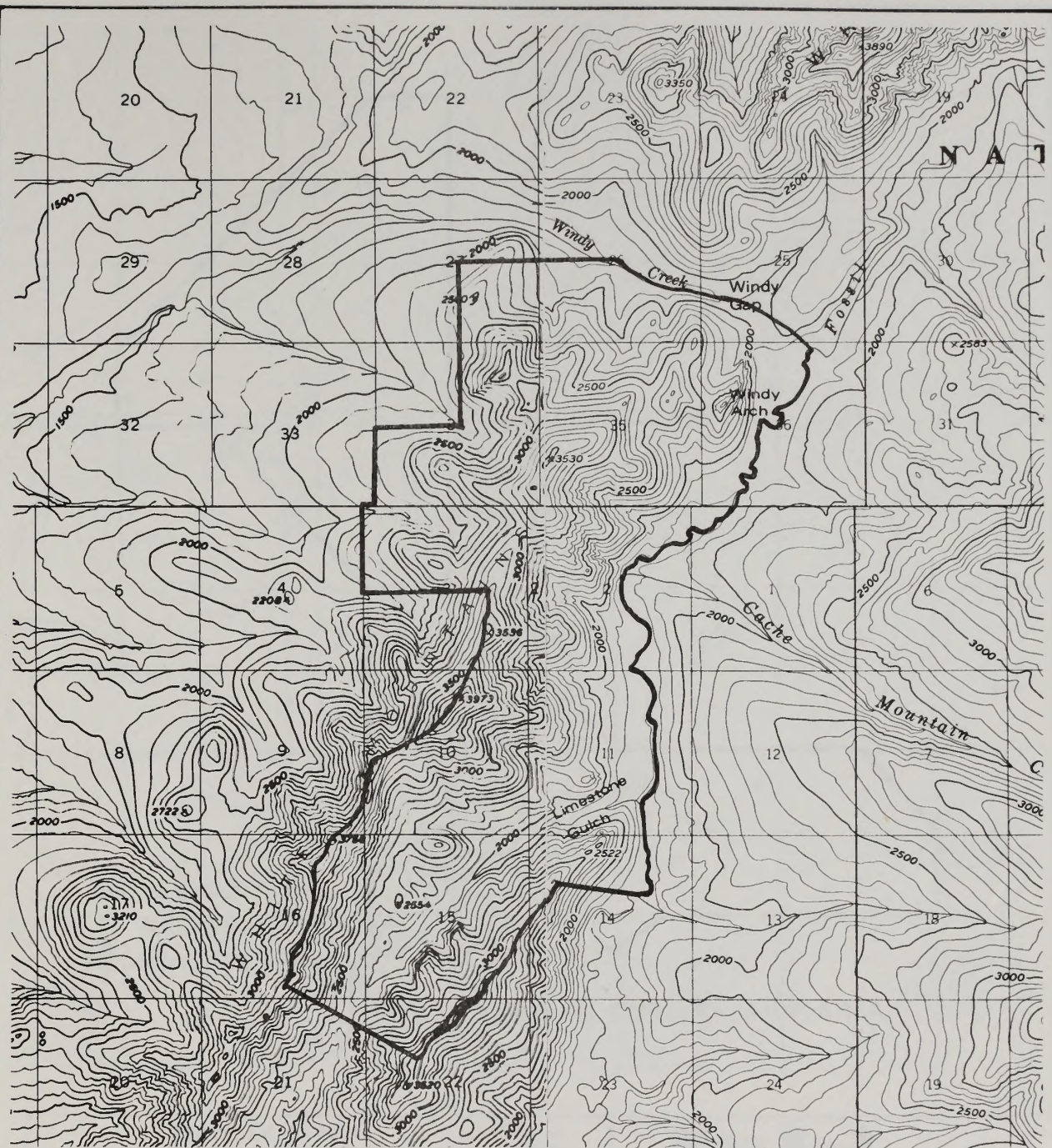
Research Natural Areas can be used for various types of scientific research. Such research could lead to improved management techniques for adjacent lands and similar lands in interior Alaska.

Detailed descriptions of the characteristics and values of the proposed RNAs are available at the Bureau of Land Management, Fairbanks District Office.



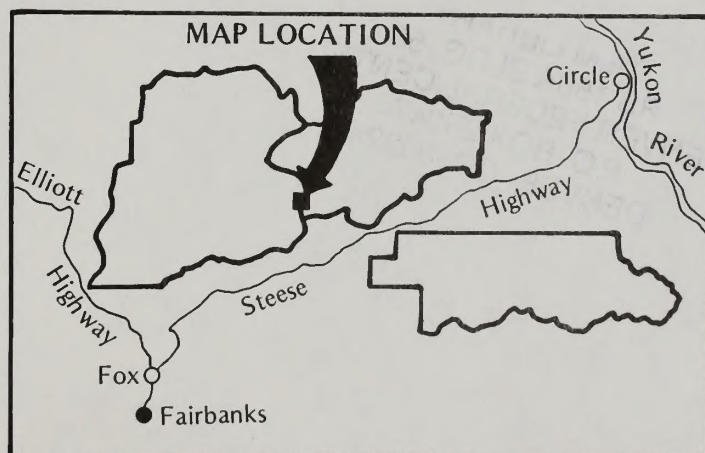
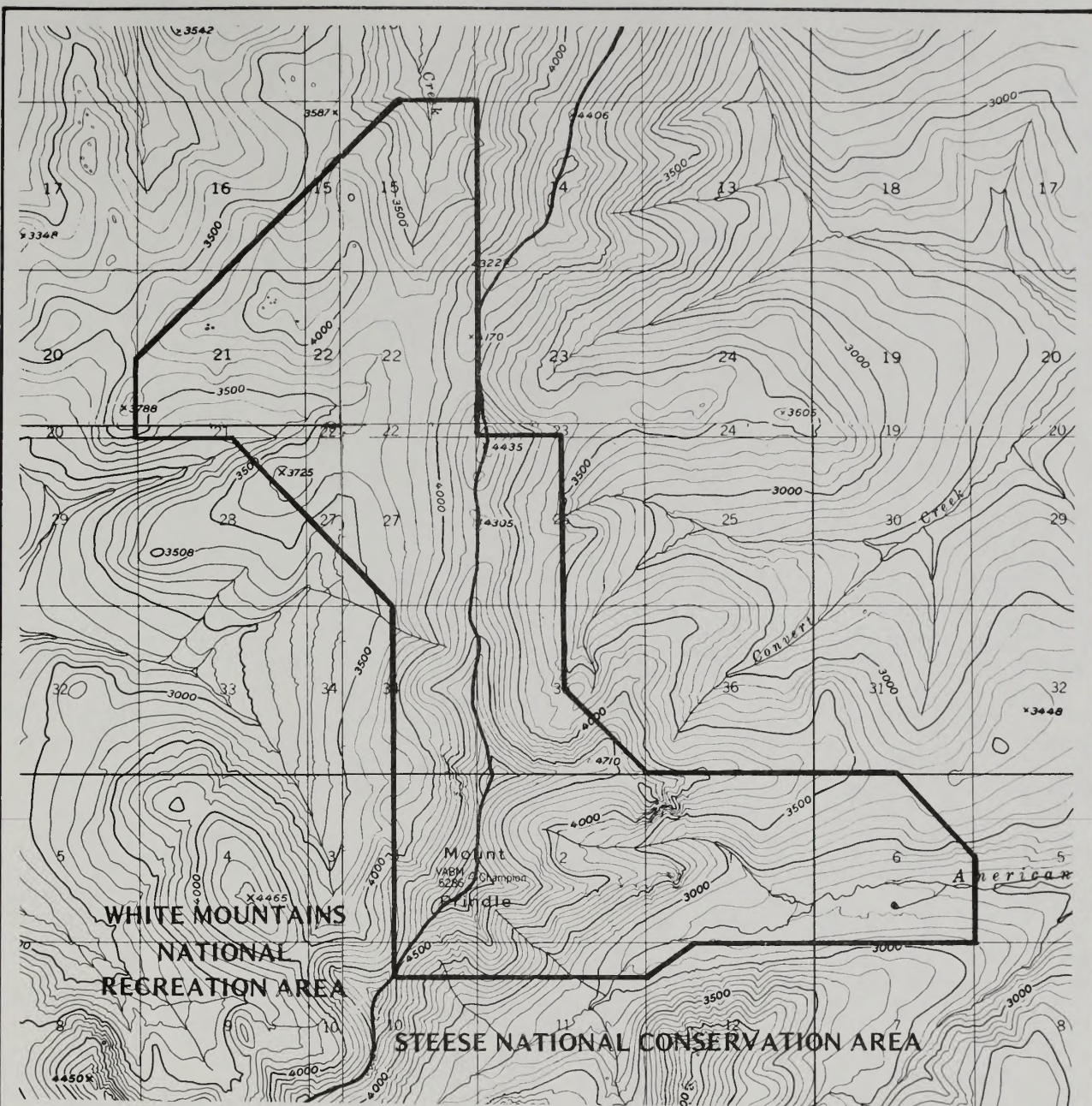
Map B-1

Proposed Serpentine Slide Research Natural Area



Map B-2

Proposed Limestone Jags Research Natural Area



Map B—3

Proposed Mount Prindle Research Natural Area

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